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ABSTRACT

This paper discusses current practices in the use of communications technologies to deliver distance instruction as they were reported by respondents to a survey of 70 postsecondary educational institutions in the United States. Results of the 1987 survey indicate that non-interactive open-broadcast television, cable television, and videocassettes were used to a greater extent than any other media to deliver instruction. Television was thought to be an effective delivery medium in all of the subject areas in which it was used, and also the most popular medium among the students. To integrate television components with other parts of the course, pre-broadcast notes and after-viewing follow-up exercises were used, as well as exercises that required students to respond during transmission. Responses also indicated that helpful student support services for television delivery included study guides, faculty telephone office-hours, individualized feedback from the faculty, phone calls initiated by the faculty, and student access to public or college libraries. The major barriers reported to the use of television for distance instruction were production and distribution costs, faculty resistance to television instruction, and lack of institutional support. Data are presented in both narrative and tabular formats. (Author/DB)

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USING COMMUNICATIONS TECHNOLOGIES FOR DISTANCE EDUCATION:

REPORT ON CURRENT PRACTICES IN THE UNITED STATES

by

Charlotte N. Gunawardena

1988

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ABSTRACT

USING COMMUNICATIONS TECHNOLOGIES FOR DISTANCE EDUCATION: REPORT ON CURRENT PRACTICES IN THE UNITED STATES

C. N. Gunawardena

This paper discusses current practices in the use of communications technologies to deliver distance instruction by a sample of postsecondary educational institutions in the United States. Results of a survey completed in 1987 indicate that television and videocassettes were used to a greater extent than any other media to deliver instruction. The majority of institutions used non-interactive open-broadcast and cable deliveries, and to a lesser extent, interactive technologies such as ITFS and satellite delivery with telephone feedback. However, in the future more institutions plan to use satellite one-way delivery and interactive technologies such as ITFS, cable with telephone feedback, and point-to-point microwave. Institutions perceived students as appreciating the electronic media: television, videocassettes, computers and tele/videoconferencing, more than correspondence texts, audiocassettes and radio. Most of the institutions used television to deliver a large portion of the course material, videocassettes to record television programs and audiocassettes to supplement and enrich other media. Television was thought to be an effective delivery medium in all of the subject areas in which it was used, but only about a third of the institutions felt it contributed towards course completion rates. To integrate television components with other parts of the course, a majority used pre-broadcast notes and follow-up exercises after viewing. Exercises requiring student

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responses during transmission were considered to be a very effective means of integration. Student support services considered to be very helpful by institutions using television as the main delivery medium were study guides, telephone office-hours for faculty teaching the course, individualized feedback from faculty, phone calls initiated by faculty, and student access to public or college libraries. The major barriers to the use of television for distance instruction were production and distribution costs, faculty resistance to television instruction, and lack of institutional support.

USING COMMUNICATIONS TECHNOLOGIES FOR DISTANCE EDUCATION: REPORT ON CURRENT PRACTICES IN THE UNITED STATES

The Purpose of the Survey

This paper reports on a survey completed in 1987, of the use of communications technologies* to deliver off-campus continuing and/or professional education by a sample of postsecondary educational institutions in the United States. The survey was undertaken to obtain information in three main areas.

I. Current practices in the use of communications technologies, especially video-based technologies, to deliver distance education. The questions were designed to elicit information on:

A. The type of media/technologies currently being used by postsecondary educators to reach distant learners.

B. The function of different media in the delivery of instruction.

C. The effectiveness of television as a delivery medium.

D. Problems related to using television for distance instruction.

E. Future plans for the use of media to deliver distance instruction.

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*The term communications technologies is used to refer to communication over distance using various electronic means such as television, radio, telephone and computers. Copy technologies such as audiocassettes and videocassettes are also included in this definition.

II. Means used to integrate television programs with textual and other media in distance education courses.

III. The student support services provided by institutions, the effectiveness of these services and the problems related to providing specific services.

Survey Methodology and Collection Procedures

The survey was mailed to a sample of seventy postsecondary educational institutions in the United States which deliver off-campus adult continuing education and/or professional continuing education. The institutions selected for this survey are the same seventy postsecondary educational institutions that were studied by Raymond J. Lewis (1983)* in his survey of institutions that use telecommunications technologies to deliver on-campus and off-campus instruction.

It was decided to use Lewis' sample of institutions, since his study was one of the most recent comprehensive surveys that had identified institutions in the United States which were using communications technologies to deliver instruction to off-campus students. Another reason that prompted the selection of this sample

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* Lewis, R. J. (1983). Meeting learners' needs through telecommunications: A directory and guide to programs. Washington D. C.: American Association for Higher Education, Center for learning and telecommunications.

was that since these institutions had experience using communications technologies for three years (since the survey in 1983), they would be able to provide an accurate picture of current use, projected future use and the problems associated with using communications technologies for instruction.

According to Lewis (1983), the seventy programs did not constitute a structured or random sample of the universe of organizations using electronic media since the information necessary to construct such a sample was not available at that time. However, he notes that "When the colleges and universities included in the survey--both individual institutions and members of consortia--are compared with the universe of all institutions in the United States, they appeared very similar." (p. 21).

For the purposes of the present survey, the seventy institutions were classified under three categories: (a) two-year colleges (14), (b) four-year colleges (28), and (c) consortia (28). Consortia included broadcast facilities, professional associations, non-profit organizations and government agencies. The institutions satisfied the following criteria.

1. Delivered adult continuing education and/or professional continuing education to off-campus students.
2. Used print and communications technologies to deliver instruction.
3. Provided student support services.

Since the institutions were selected on the basis of the above stated criteria, the sample is deliberately biased towards

institutions that are currently using communications technologies to deliver distance instruction. This must be borne in mind when the results are discussed. The aim of this survey is not to generalize findings to a larger population but to describe current practices in using communications technologies to deliver distance instruction from a representative sample of institutions. When reading the results of this survey, it is also important to keep in mind the biases associated with self-reported data in a highly structured situation.

The seven page survey questionnaire consisting of 25 questions (Appendix I), was mailed in November 1986 to the "Contact Person" for each institution listed by Lewis (1983). The "Contact Person" is the director of the program or the person responsible for the program. By survey closeout, in March 1987, 49 institutions (70%) of a total of 70 institutions had returned a completed questionnaire. The highest response rate was from two-year colleges -- 12 (86%), followed by four-year colleges --22 (79%), and consortia -- 15 (54%). In the consortia category, there was one non-profit organization, one professional association, one government agency, one broadcast facility. The rest were local, state, regional and national consortia.

It should be pointed out that the questionnaire was designed primarily for two-year and four-year institutions; therefore, some institutions in the consortia category had difficulty in responding to some of the items.

The survey responses were analyzed using the SPSSx package

(Statistical Package for the Social Sciences), and yielded very large amounts of data, much of which cannot be presented in a single report. Therefore, only the most salient findings will be discussed. Survey data will be reported using the overall response rates in percentages and, where pertinent, crosstabulations by the three institution types: two-year colleges, four-year colleges and consortia will be reported. Statistically, it is useful to look at the overall results, in view of the smaller number of respondents in the three institution categories (two-year - 12, four-year - 22, and consortia - 15).

MAJOR FINDINGS

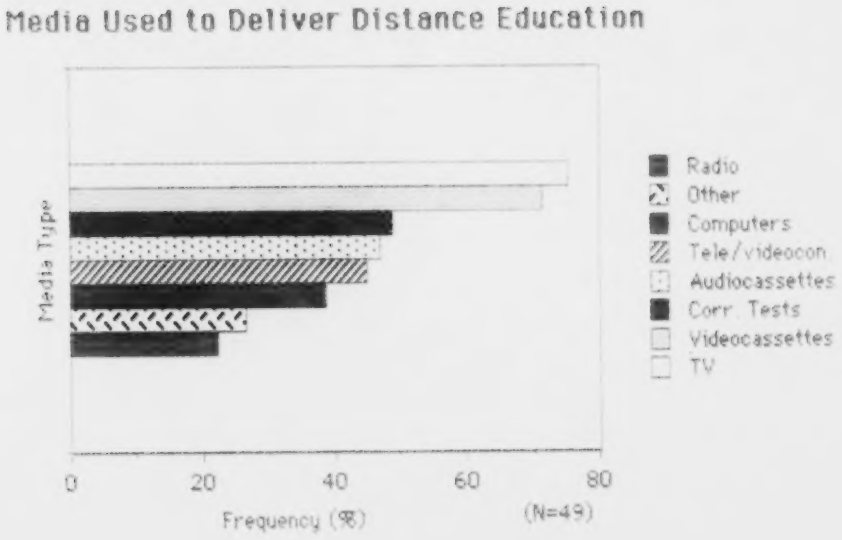
The survey findings will be discussed under the major areas of research interest discussed at the beginning of this paper.

I. Current Practices in the Use of Communications Technologies to Deliver Distance Instruction.

I. A. 1. The type of media/technologies currently being used by postsecondary educators to reach distant learners.

One of the most salient findings of this study is that the 49 institutions surveyed were using television and videocassettes to a greater extent than any other media to deliver instruction to distant learners. (See Figure 1.) Both these technologies have the capability of delivering instruction directly to the students' homes. The convenience of using these media at home and the high prevalence of television sets, and to an increasing extent

Figure 1


Media Used to Deliver Distance Education
Media Type
Radio
Other
Computers
Tele/videocon
Audiocassettes
Corr. Tests
Videocassettes
TV
0
20
40
60
80
Frequency (%)
(N=49)

videocassette recorders in student homes, may reflect the extent to which these technologies are being used to deliver distance instruction in the United States. Depending on the type of delivery mode, video technologies also have the advantage of being able to portray visual images of people, places, events and ideas and bring resources to learners which would not be possible through any other medium. This is of great importance to distant learners who cannot get to an educational institution to share in a teaching experience such as a laboratory experiment.

Figure 1 also indicates that correspondence texts, a primary medium for delivering distance instruction a decade ago, are used less than television and videocassettes. Audiocassettes and tele/videoconferencing are used almost as much as correspondence texts. It can be observed that tele/videoconferencing is emerging as a means of delivering distance education. Tele/videoconferencing has a great advantage in being able to share expert teaching with learners spread across vast distances but has the disadvantage of not being able to reach learners in their own homes. Learners have to be present at a receiving site in order to participate in a tele/videoconference.

Computers, an emerging instructional technology in on-campus instruction, are not being used to a great extent to deliver distance instruction; probably because of the very high cost of the medium and problems related to student access. Radio emerged as the least used medium to deliver distance instruction.

The "Other" media mentioned included: printed study guides and

texts, printed support material for television and telephone courses, standard texts, standard SRA kits for off-line reading, science kits, slides, adjunct lecturers, electronic blackboard and computer conferencing.

Figure 2 presents a breakdown of television technologies used by institutions. The majority of institutions use open-broadcast television (76%) and cable television-- one-way video (68%) to deliver distance instruction. Both these television technologies are noninteractive, i.e. permit communication only in one direction, but are capable of reaching the learners in their own homes.

Instructional Television Fixed Service (ITFS) or closed circuit television was used by (41%) of the institutions. Although this technology by itself is not interactive it can be made an interactive mode by providing telephone feedback for viewers to call in, to interact with the instructor.

Satellite delivery with telephone feedback during the presentation, was being used (32%) as much as satellite television with only one-way video (35%). It is more advantageous to the distant learner if satellite delivery is used in an interactive mode.

Other interactive technologies such as cable television with telephone feedback during program (22%), and point to point microwave (30%) were used by fewer institutions.

It appears that most of the institutions surveyed are multi-media based (Figure 3) employing a combination of three (25%) and two (23%) types of media to deliver instruction. Only (6%) of the

Figure 2

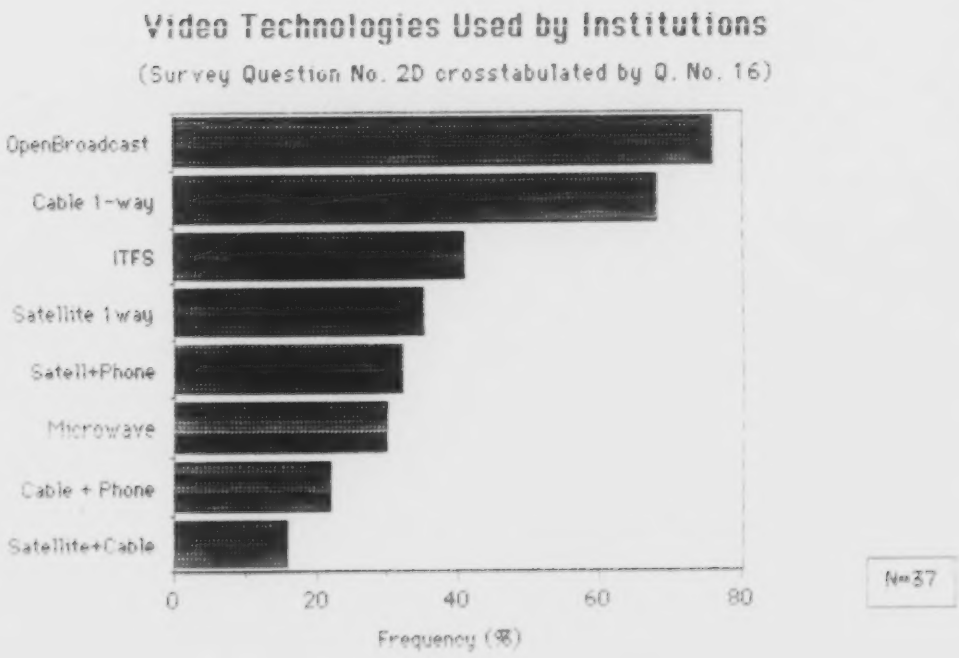
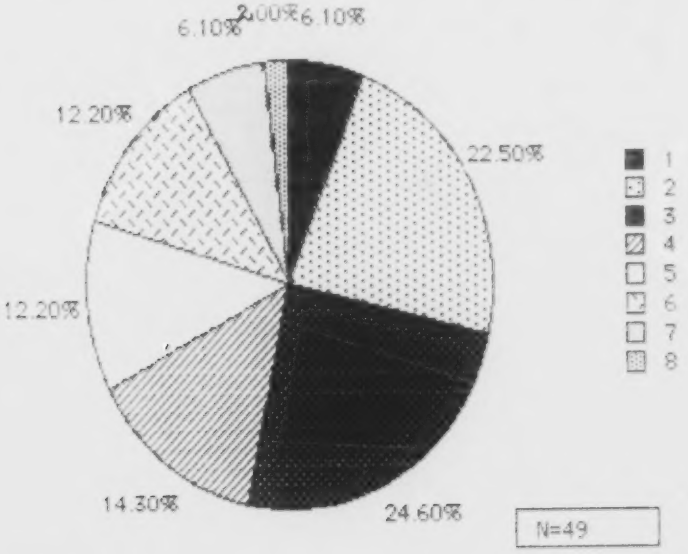

Video Technologies Used by Institutions
(Survey Question No. 2D crosstabulated by Q. No. 16)
OpenBroadcast
Cable 1-way
ITFS
Satellite 1way
Satell+Phone
Microwave
Cable + Phone
Satellite+Cable
0
20
40
60
80
Frequency (%)
N=37

Figure 3

No. of Media Used by Institutions to Deliver Distance Education



institutions indicated that they use just one medium for delivery.

There was no significant difference between the three institution types in the sample, two-year colleges, four-year colleges and consortia in the use of media for the delivery of instruction. The majority of institutions in all three institution categories used television and videocassettes. (See Figure 4.) However, it can be observed that the two-year colleges in the sample were using the new technologies: television, videocassettes and computers much more than the four-year colleges to deliver distance instruction. More four-year colleges, on the other hand, made use of correspondence texts and tele/videoconferencing. The least used medium in all three institution categories was radio.

I. A. 2. Student Appreciation of Media as Described by Institutions

Institutional perceptions of the overall appreciation of media by students indicate that the two video technologies, television and videocassettes, are perceived as the most popular mediums among students (figure 5). The two audio mediums, audiocassettes and radio, were the least appreciated. The appreciation ratings for correspondence texts, tele/videoconferencing and computers fall in between the video and audio mediums. Institutional perceptions indicate that the students appreciate the electronic media, television, videocassettes, computers and tele/videoconferencing more than the other media.

When interpreting the results for the question (questionnaire item 4: "How well do students like the following delivery media?")

Figure 4

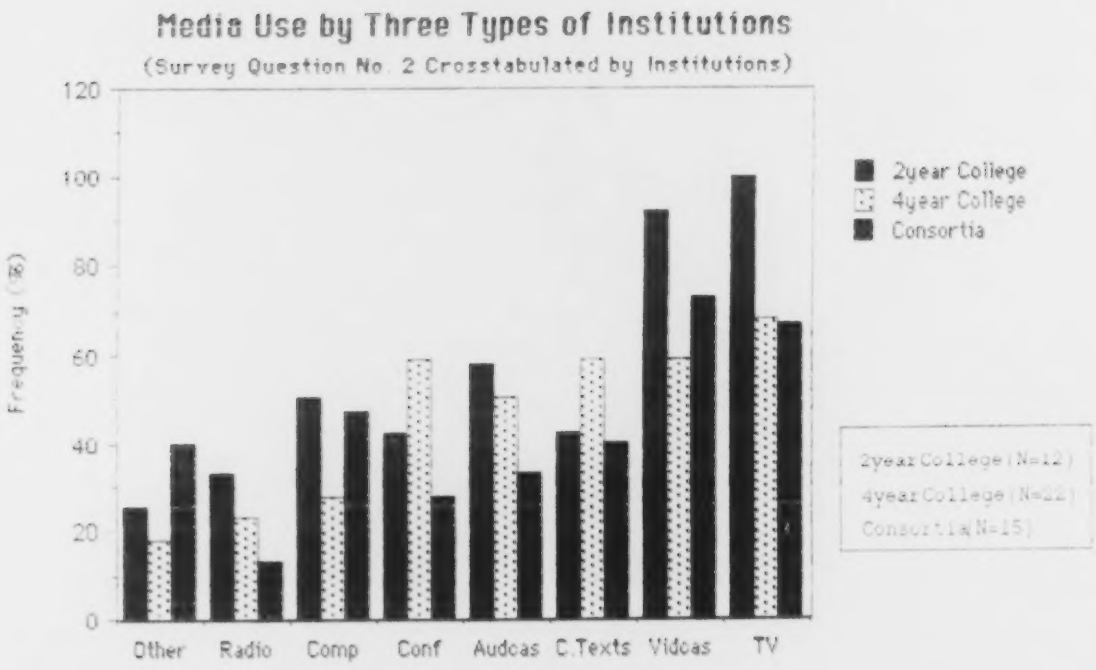
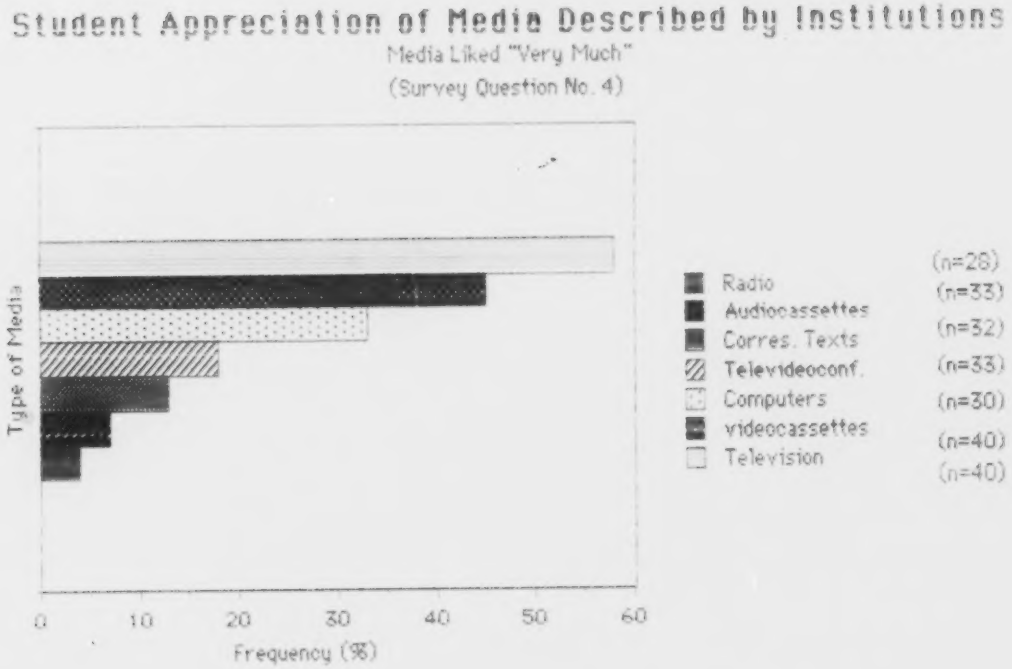

Media Use by Three Types of Institutions
(Survey Question No. 2 Crosstabulated by Institutions)
Frequency (%)
120
100
80
60
40
20
0
Other
Radio
Comp
Conf
Audcas
C.Texts
Vidcas
TV
2year College
4year College
Consortia
2yearCollege(N=12)
4yearCollege(N=22)
Consortia(N=15)

Figure 5

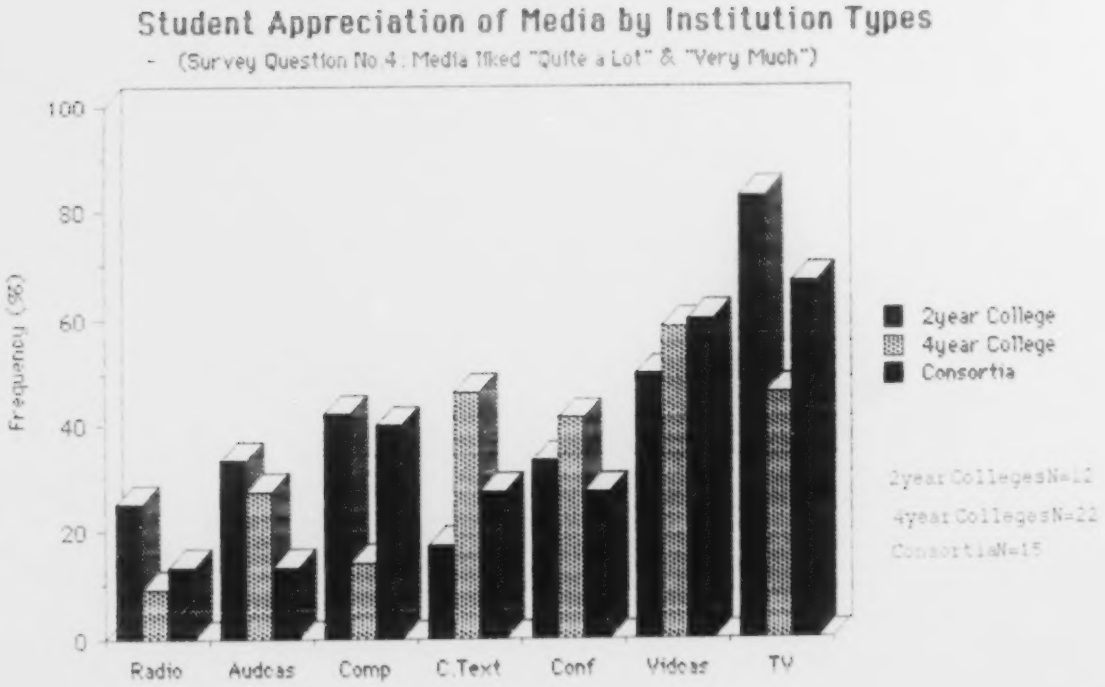

Student Appreciation of Media Described by Institutions
Media Liked "Very Much"
(Survey Question No. 4)
Type of Media
Frequency (%)
0
10
20
30
40
50
60
Radio (n=28)
Audiocassettes (n=33)
Corres. Texts (n=32)
Televideoconf. (n=33)
Computers (n=30)
videocassettes (n=40)
Television (n=40)

it is important to keep in mind the fact that the responses indicate institutional perceptions of student appreciation media and not the opinions of students themselves. The total number of respondents for each media type differed (see figure 5). However, the conversion of frequencies to percentages enable the comparison of responses between media.

Crosstabulations of student appreciation o media (combined like "quite a lot" and "very much" categories), by institution types: two-year, four-year and consortia are shown in Figure 6. Two-year institutions perceive students as liking television the most (83%), followed in order by videocassettes (50%), and computers (42%). Four year institutions, however, indicated that students liked videocassettes the most (59%), followed by television (46%) and correspondence texts (46%) both of which received the same appreciation rating. Consortia perceived students as liking the two video technologies television and videocassettes (67% and 60%) the most, followed by computers (40%). Two-year colleges and consortia perceived student preferences for media in a similar pattern: the most liked being television followed in order by videocassettes and computers. Four-year colleges, on the other hand, felt that students appreciated correspondence texts as much as television.

Comparison of data for institutional perceptions of student appreciation of media (questionnaire item 4) and media used by institutions to deliver instruction (questionnaire item 2), indicate that a similar pattern emerges between the most frequently used media and the most appreciated media. (See figures 1 and 5.) A

Figure 6


Student Appreciation of Media by Institution Types
- (Survey Question No.4 : Media liked "Quite a Lot" & "Very Much")
Frequency (%)
100
80
60
40
20
0
Radio
Audcas
Comp
C.Text
Conf
Vidcas
TV
2year College
4year College
Consortia
2yearCollegesN=12
4yearCollegesN=22
ConsortiaN=15

majority of institutions used television and videocassettes to deliver instruction and these were also the mediums reported as most appreciated by students. Correspondence texts and tele/videoconferencing were used about the same by institutions and received similar appreciation ratings. In the case of audiocassettes, however, there is a marked difference between their use and appreciation figures: they were used more but appreciated less. Radio was the least used medium and the least appreciated medium. Institutional perceptions of student appreciation of media may be influenced by their use, but this cannot be determined from the data in this survey.

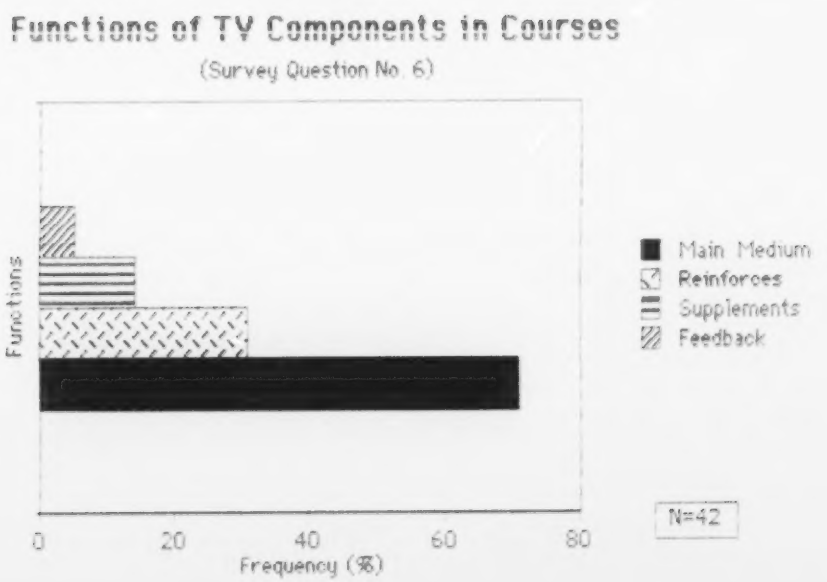
I. B. The Functions of Different Media, (Television, Videocassettes, Audiocassettes, and Computers) in the Delivery of Distance Instruction

One of the areas of research interest in this survey, was to obtain information on the functions performed by different media in the delivery of instruction which would give an indication of the extent to which communications technologies are being used by institutions to deliver distance instruction.

I. B. 1. Television

The majority of institutions surveyed were using television as the primary instructional delivery medium, in other words, the medium that delivered a large portion of the course material to off-campus students (71%). (See responses to questionnaire item 6 in figure 7.) Other uses of television were: a) to reinforce and

Figure 7


Functions of TV Components in Courses
(Survey Question No. 6)
Functions
Main Medium
Reinforces
Supplements
Feedback
N=42
0
20
40
60
80
Frequency (%)

enrich print and other media (31%), b) to supplement material not covered in texts (14%), and c) to provide the learner with feedback (5%). One institution checked the "other" category and indicated that television was used as part of a mix. (Since multiple responses were possible, totals for all institutions do not add upto 100%.) It can be concluded from these responses that next to being a major delivery medium, television was used more as a reinforcing and enriching medium than as a medium which supplemented material not covered in texts.

One respondent pointed out a difficulty in responding to questionnaire item six, because his or her institution's ITFS deliveries were completely different from broadcast telecourses. In the case of ITFS deliveries, television carried much of the course content, and in the case of broadcast television, it carried much less. Unfortunately, this question did not distinguish between the types of delivery technologies used, when eliciting information on the function of television in the programs.

However, crosstabulations were done between questionnaire items six and sixteen to provide a breakdown of television technologies used by the 30 institutions (71%) that reported using television for delivering a large portion of the course material. The use of television technologies by these institutions are indicated below.

Open-broadcast TV	- 60%
Cable TV (one-way)	- 50%
Satellite TV (one-way)	- 40%
Satellite TV (with phone feedback during program)	- 40%
ITFS	- 40%
Point to Point Microwave	- 27%
Cable TV (with phone feedback during program)	- 20%
Satellite to cable networks	- 17%

This data indicates that although institutions are using interactive technologies to a certain degree, the dominant delivery technology is one-way television. Where the technologies themselves are not interactive, other means are used by institutions to provide the interaction necessary in a distance learning system. These are discussed later in the section on student support services.

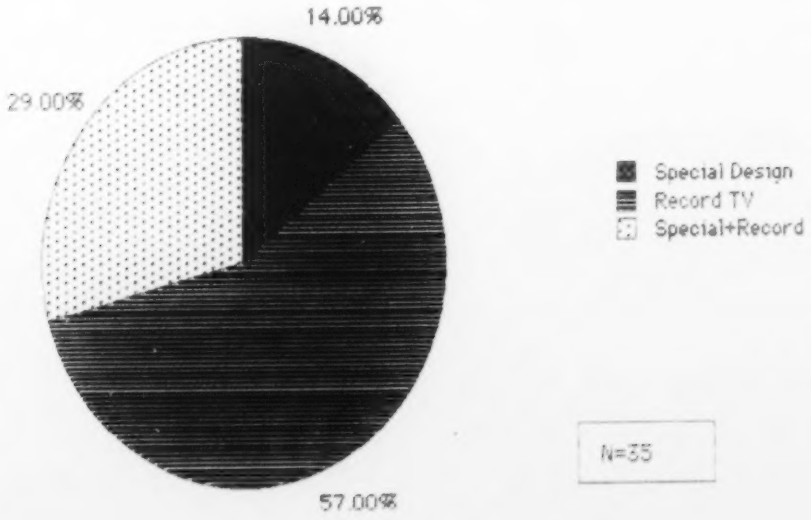
I. B. 2. Videocassettes

The main purpose for which videocassettes were used by a majority of institutions (57%), is to record television broadcasts. (See figure 8, for responses of 35 institutions to questionnaire item 13.) Only five institutions (14%) reported that they used videocassettes primarily designed to take advantage of the cassette medium (for example, designed with activities such as directing students at the end of sequences to stop and take notes on, or discuss what they have seen and heard). Ten institutions (29%) reported that some videocassettes were specially designed to take advantage of the cassette medium and some were used to record broadcasts. It can be inferred from this data that a majority of those who use videocassettes, were not producing their own and were therefore, not able to take advantage of the unique characteristics

Figure 8

The Purposes for which Videocassettes are Used

(Survey Question No. 13)



of the cassette medium.

Crosstabulations of the use of videocassettes by the three institution types revealed no significant differences in the pattern of use. On the whole two-year colleges and consortia used videocassettes much more (92% and 80% respectively), than four-year colleges (67%).

I. B. 3. Audiocassettes

The main purpose for which a majority of institutions (70%), used audiocassettes is to provide supplementary or resource material to students (See figure 9 for responses to survey item 14.) Audiocassettes were also used by a large number (60%), to enrich print and other media. About half of the respondents (53%) used audiocassettes to provide essential study material. Very few indicated that they were used a) to provide remedial material for students with special problems (13%), b) to provide audio reviews of television programs (10%), or c) to provide educational counselling (3%). None of the institutions surveyed used audiocassettes to provide feedback on assignments. The "other" uses mentioned were: (a) to provide audio reviews of audio programs, and (b) to record broadcast or cable television sessions when they are missed.

I. B. 4. Computers

A majority of institutions that use computers (67%) cited them as being "very useful" in the performance of administrative functions such as keeping student records. (See figure 10 for responses to questionnaire item 15.) They were also considered "very useful" in performing "other" functions (57%), such as: test

Figure 9

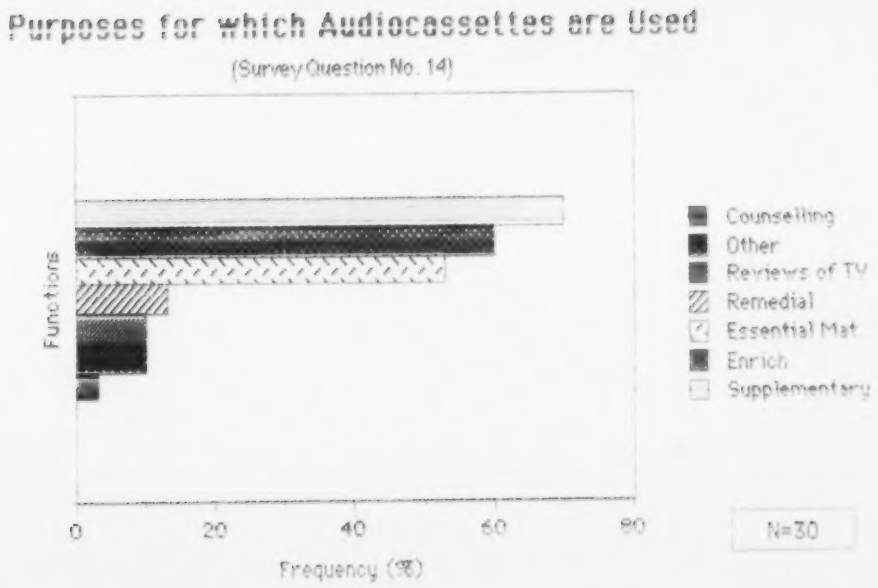
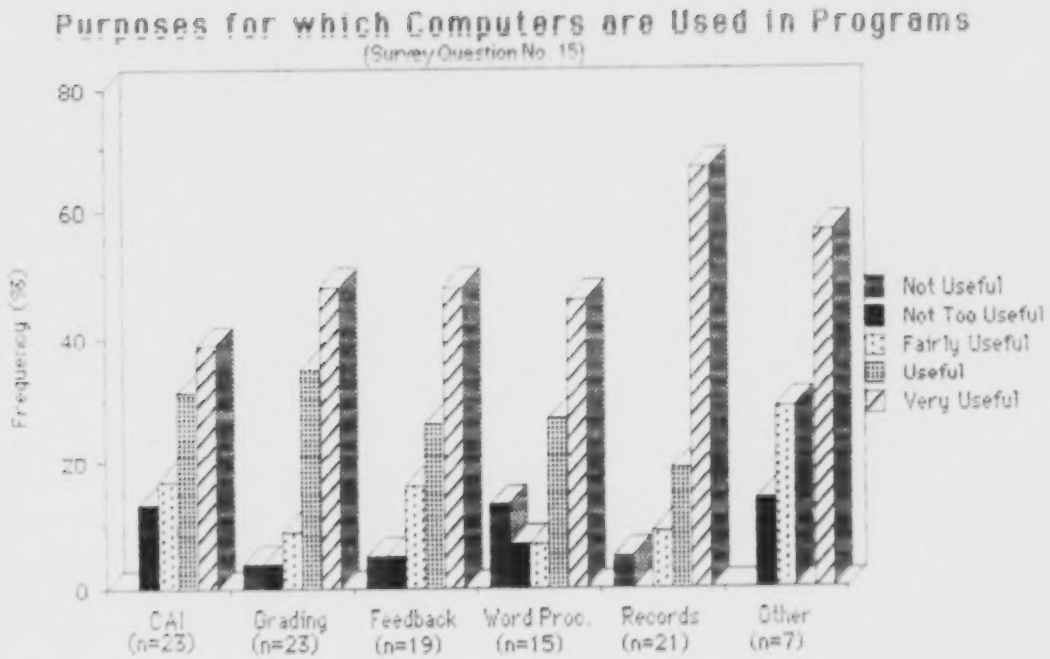

Purposes for which Audiocassettes are Used
(Survey Question No. 14)
Functions
0
20
40
60
80
Frequency (%)
Counselling
Other
Reviews of TV
Remedial
Essential Mat
Enrich
Supplementary
N=30

Figure 10


Purposes for which Computers are Used in Programs
(Survey Question No. 15)
Frequency (%)
80
60
40
20
0
CAI (n=23)
Grading (n=23)
Feedback (n=19)
Word Proc. (n=15)
Records (n=21)
Other (n=7)
Not Useful
Not Too Useful
Fairly Useful
Useful
Very Useful

analysis, computer programming assignments, and counselling-- direct communication with professors and fellow students.

When the "useful" and "very useful" categories are combined, a large number of institutions (83%) indicated that they are useful in grading assignments and tests. They were also considered useful in providing individualized feedback to students (74%). Although (70%) of the institutions reported that computer assisted instruction (CAI) was useful, this usefulness rating was lower than the usefulness rating for computers in the performance of administrative and support functions (86%).

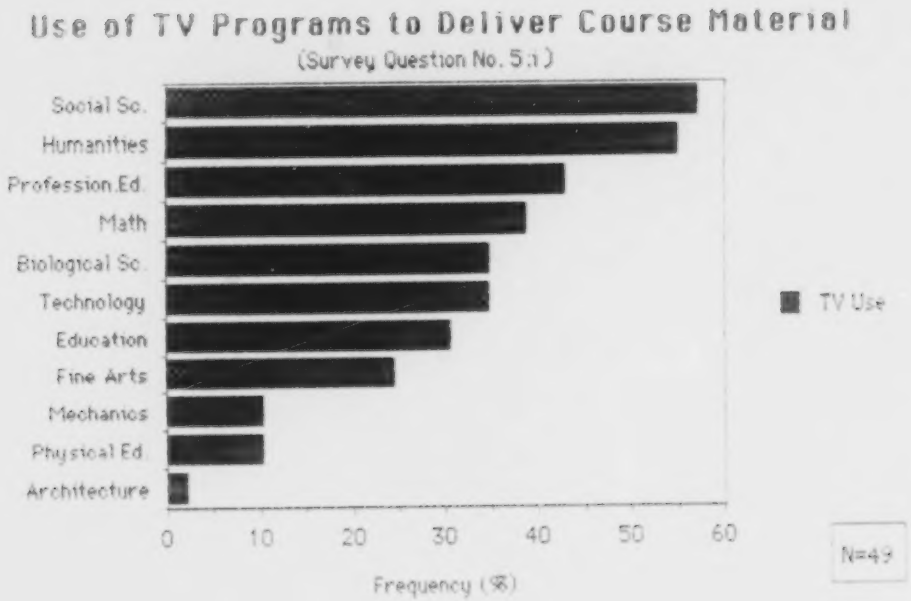
The pattern that emerges from responses to this question is that computers are considered very useful in the administrative functions and student support services of distance education programs.

I. C. The Effectiveness of Television as a Delivery Medium

I. C. 1. The Use and Effectiveness of Television Programs for Delivering Instructional Materials in Various Subject Areas

The majority of institutions surveyed reported using television programs (both broadcast and copy video technologies) for delivering instruction in the social sciences (57%) and humanities (55%). (See figure 11 for responses to questionnaire item [5:1].) Television was also used by several (43%) to deliver professional education in areas such as engineering, business, law, interior design, library science, nursing etc. About a third of the respondents used it to deliver instruction in mathematical sciences (38%), biological

Figure 11


Use of TV Programs to Deliver Course Material
(Survey Question No. 5.1)
Social Sc.
Humanities
Profession.Ed.
Math
Biological Sc.
Technology
Education
Fine Arts
Mechanics
Physical Ed.
Architecture
0
10
20
30
40
50
60
Frequency (%)
TV Use
N=49

sciences (35%), and technology (35%).

Effectiveness ratings for television programs in various subject areas (Figure 12), indicate that television was perceived as an "effective" and "very effective" delivery medium in all of the subject areas it was used in except physical education. A fairly large number of institutions rated television as being "very effective" in the humanities (64%), fine arts (64%), biological sciences (62%), social sciences (61%) and technology (60%).

I. C. 3. Contribution of a Television Component to Course Completion Rates

Institutions surveyed were asked to express their opinions on whether distant learners were more likely to complete courses which had a television component. Responses by all institutions in the sample (see Figure 13), indicate that only about a third (32%) felt that a television component contributed towards the completion of a course. About two-fifths (40%) indicated that they could not judge whether television contributed towards course completion, and a very small percentage (12%) reported that television did not contribute towards course completion rates.

Crosstabulation of these responses by institutions that specifically indicated using television for the delivery of instruction shows a similar response pattern (Figure 14). It can be concluded from this data that a number of institutions are yet to be convinced that a television component contributes towards course completion rates. (Refer back to Figure 2 for a breakdown of the

Figure 12

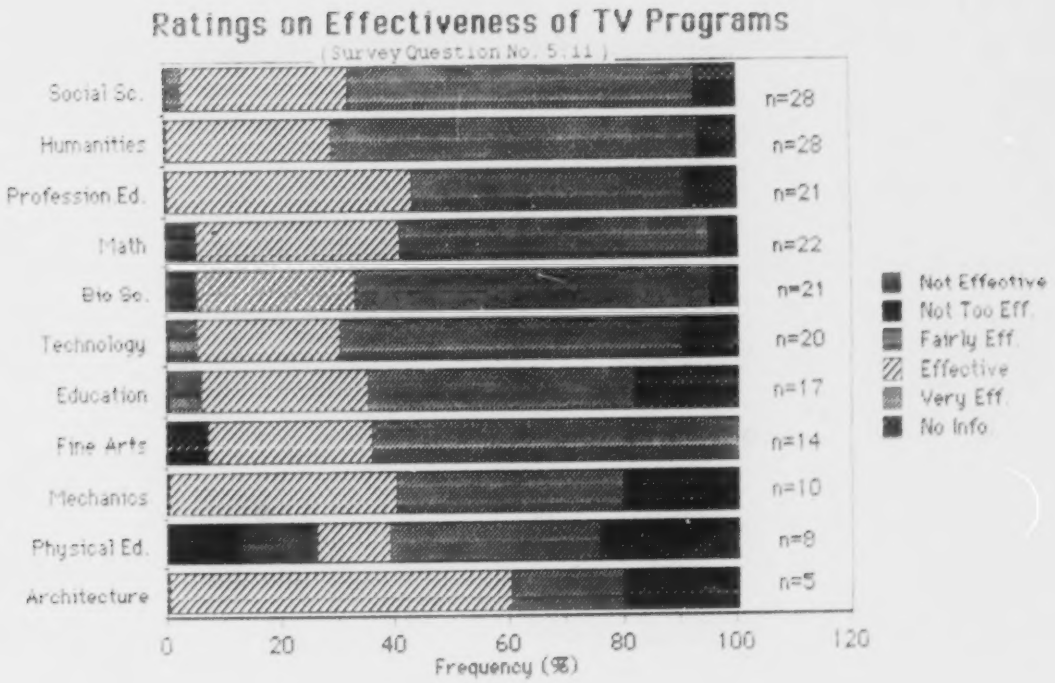

Ratings on Effectiveness of TV Programs
(Survey Question No. 5.11)
Social Sc.
Humanities
Profession Ed.
Math
Bio Sc.
Technology
Education
Fine Arts
Mechanics
Physical Ed.
Architecture
n=28
n=28
n=21
n=22
n=21
n=20
n=17
n=14
n=10
n=9
n=5
0
20
40
60
80
100
120
Frequency (%)
Not Effective
Not Too Eff.
Fairly Eff.
Effective
Very Eff.
No Info.

Figure 13

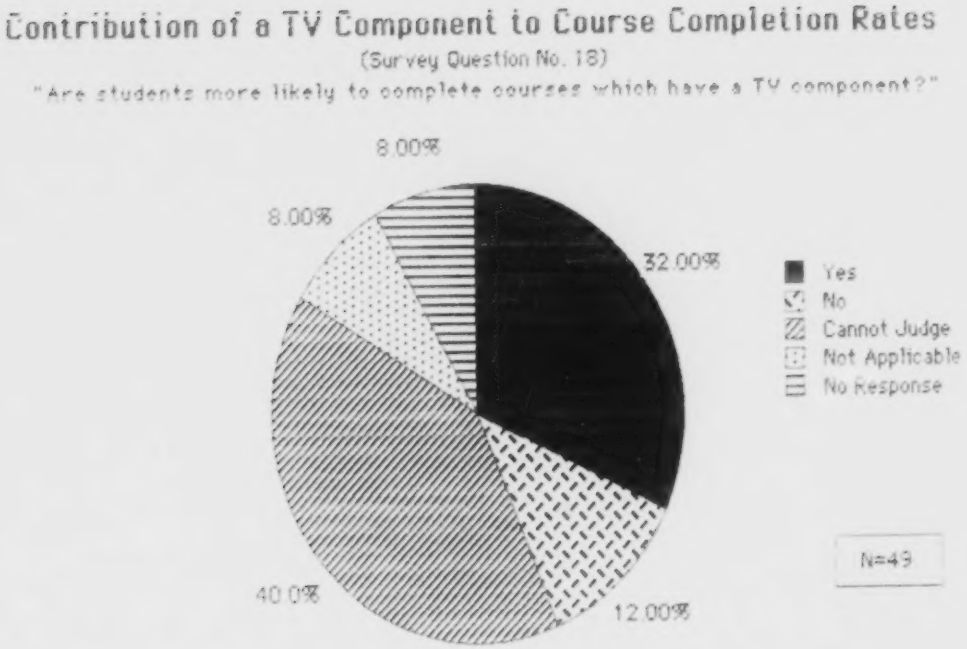
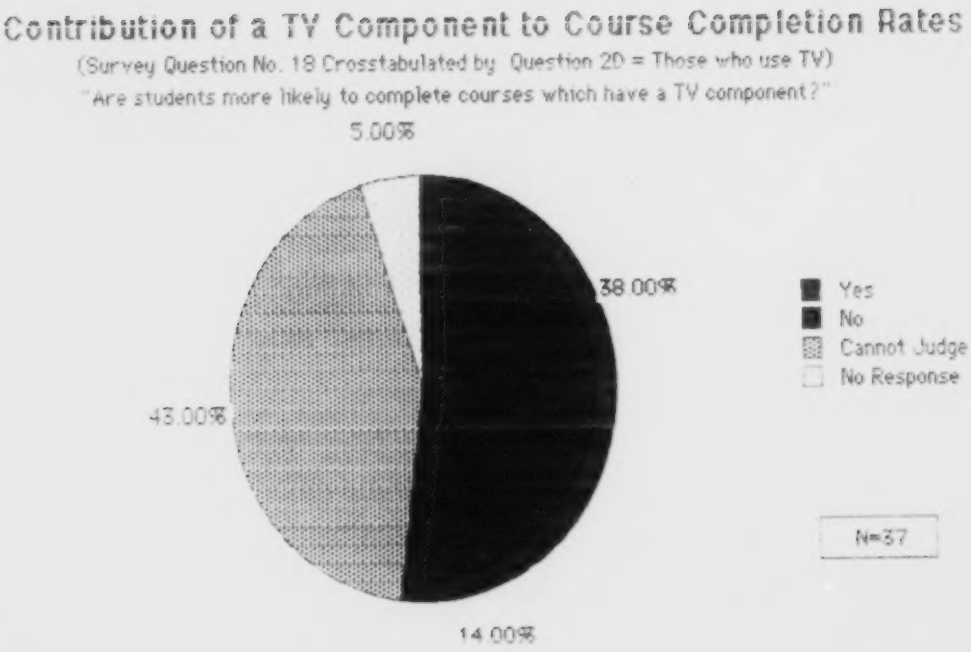

Contribution of a TV Component to Course Completion Rates
(Survey Question No. 18)
"Are students more likely to complete courses which have a TV component?"
8.00%
8.00%
32.00%
40.0%
12.00%
Yes
No
Cannot Judge
Not Applicable
No Response
N=49

Figure 14


Contribution of a TV Component to Course Completion Rates
(Survey Question No. 18 Crosstabulated by Question 20 = Those who use TV)
"Are students more likely to complete courses which have a TV component?"
5.00%
38.00%
43.00%
14.00%
Yes
No
Cannot Judge
No Response
N=37

delivery technologies used by these institutions.)

It is pertinent here to compare these responses a) with institutional perceptions of student appreciation of media (Figure 5) where television and videocassettes are ranked as the most popular mediums, and b) institutional perceptions of the effectiveness of television as a delivery medium (Figure 12), where television was seen as an effective medium in delivering course material in most of the subject areas listed. It can be concluded from these comparisons that although television is perceived as a popular and effective medium, its contribution towards course completion rates, is still to be determined by a fairly large number of institutions. Unfortunately, data from this survey cannot shed more light on this issue. It would be interesting to investigate this point further. However, this would involve a careful analysis of the kind of television being used by institutions and how well the television components are integrated with the rest of the course material. In this regard, it is important to mention a comment made by one respondent to this question, who pointed out that distant learners will complete more course work with ITFS or closed circuit interactive television than open-broadcast one-way delivery.

To wrap up the discussion on institutional perceptions of the effectiveness of television as an instructional medium, it is pertinent to quote from one consortium's attachment to survey question item six.

"Television-based courses are flexible learning systems that can be used in any number of learning environments to

meet diverse programmatic needs.

By fulfilling repetitive lecture tasks, telecourses provide instructors with the time to respond to individual student needs and to pursue research and development projects.

In today's competetive educational climate, the use of telecommunications increases an institution's enrollment potential; it opens doors to a community of people who cannot fit their lives into traditional campus schedules.

By introducing individuals to the skills necessary for assessing and evaluating information in the telecommunications age, educators can use telecourses to encourage independent study and lifelong learning.

Television expands the walls of traditional classrooms, introducing students to international subject experts and exposing them to places and events they would not otherwise see.

Computer graphics and animation can illustrate experiments, demonstrations, concepts and processes which are impossible to duplicate in words or in print."

(The name of the consortium cannot be identified because of the confidentiality assured to respondents in the publication of results.)

I. D. Problems Related to Using Television for Distance Instruction

I. D. 1. Factors Determining the Use of Television in Distance Education Programs

Institutions surveyed were asked to rate how important several selected factors were in determining the use of television programs in their courses (Figure 15). The three factors rated as "very important" were a) the availability of funds (55%), b) academic necessity or the need to provide a television component for the course (52%), and c) student access to television viewing facilities (44%).

Other factors considered "very important" in determining the use of television were, in order of importance: the number of students enrolled in the course (40%), staffing considerations (32%), cooperation with a broadcast organization (30%), the availability of good transmission times (19%), and the length or duration of a course (10%). Dependency on another educational organization was considered by several (63%) to be "not important at all" in determining the use of television

I. D. 2. Major Barriers to Using Television for Distance Instruction

In an open-ended question, institutions were asked to express their opinions on the major barriers to the use of television for distance education. Out of a total of 49 institutions in the sample, 43 responded to this question. The major barrier cited most frequently was production and distribution costs (37%). (See Figure 16.) Next to cost, faculty resistance to television instruction

Figure 15

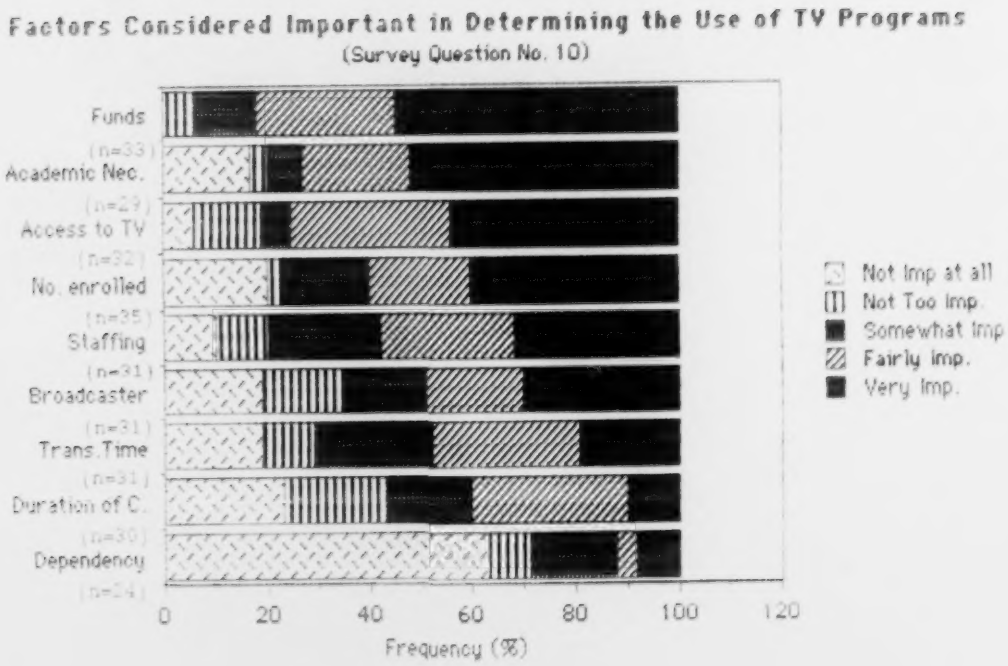
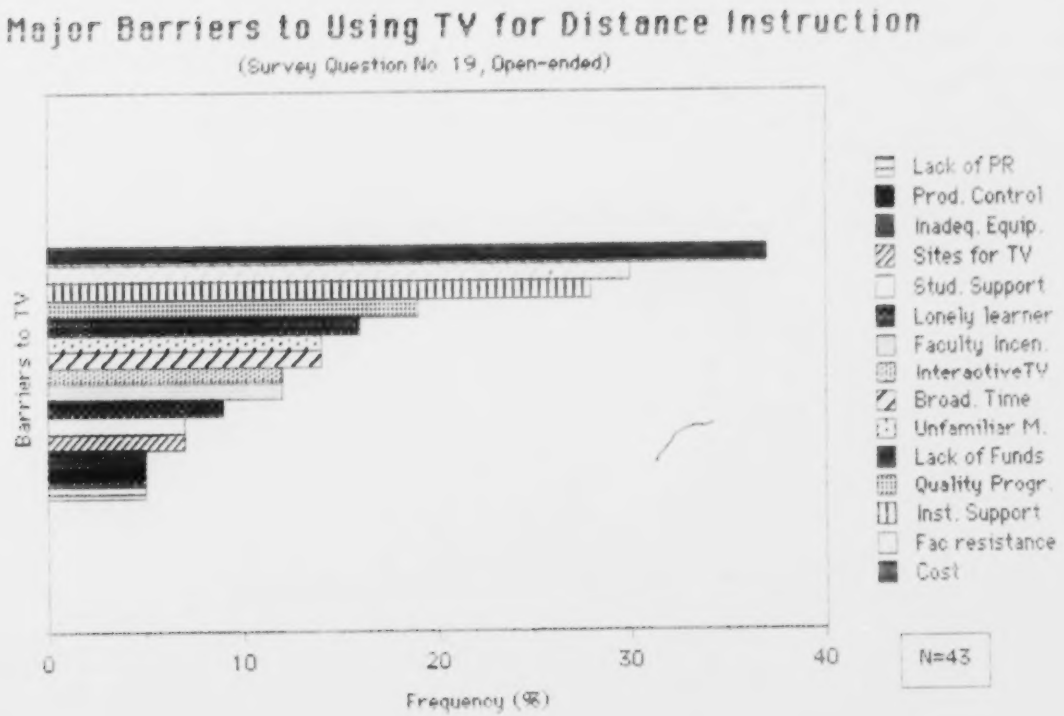

Factors Considered Important in Determining the Use of TV Programs
(Survey Question No. 10)
Funds
(n=33)
Academic Nec.
(n=29)
Access to TV
(n=32)
No. enrolled
(n=35)
Staffing
(n=31)
Broadcaster
(n=31)
Trans.Time
(n=31)
Duration of C.
(n=30)
Dependency
(n=24)
0
20
40
60
80
100
120
Frequency (%)
Not Imp at all
Not Too Imp.
Somewhat Imp
Fairly Imp.
Very Imp.

Figure 16


Major Barriers to Using TV for Distance Instruction
(Survey Question No. 19, Open-ended)
Barriers to TV
0
10
20
30
40
Frequency (%)
Lack of PR
Prod. Control
Inadeq. Equip.
Sites for TV
Stud. Support
Lonely learner
Faculty Incen.
InteractiveTV
Broad. Time
Unfamiliar M.
Lack of Funds
Quality Progr.
Inst. Support
Fac resistance
Cost
N=43

(30%), and lack of institutional support for television instruction (28%), were perceived as major barriers to the use of television.

Most of the other barriers mentioned were those experienced by institutions delivering the instruction, seen from an institutional standpoint rather than problems experienced by students. They were lack of quality pre-produced programs (19%), lack of funds (16%), faculty's unfamiliarity with the medium (14%), cooperation with a broadcaster or the availability of broadcast time (14%), lack of interaction in the technology (12%), lack of incentives for faculty (12%), establishing sites for satellite television (7%), inadequate equipment (5%), lack of control over production (5%), and lack of PR for television courses (5%).

Very few (9%) mentioned the problems experienced by the distant learner, (the lonely learner--low motivation and lack of interaction with others), and the difficulty of providing student support (7%).

It is pertinent to quote here from comments made by two institutions regarding barriers to the use of new technologies for distance education. Institutions quoted cannot be identified because of the confidentiality assured to respondents in the publication of results.

> a)" We have found after seven years of experience, that the technologies are far less troublesome than the intra-institutional, political and bureaucratic integration of the program. An alternative delivery system affects <u>all</u> other offices and procedures at the institution. Secondly, we have learned a general rule about alternative

delivery of course work--every technologically imposed limitation simultaneously offers a countervailing opportunity not available in other modes of instruction (or vice versa)."

b) "There is no campus policy and no interest in serving distant learners except where industry has demanded and paid for it."

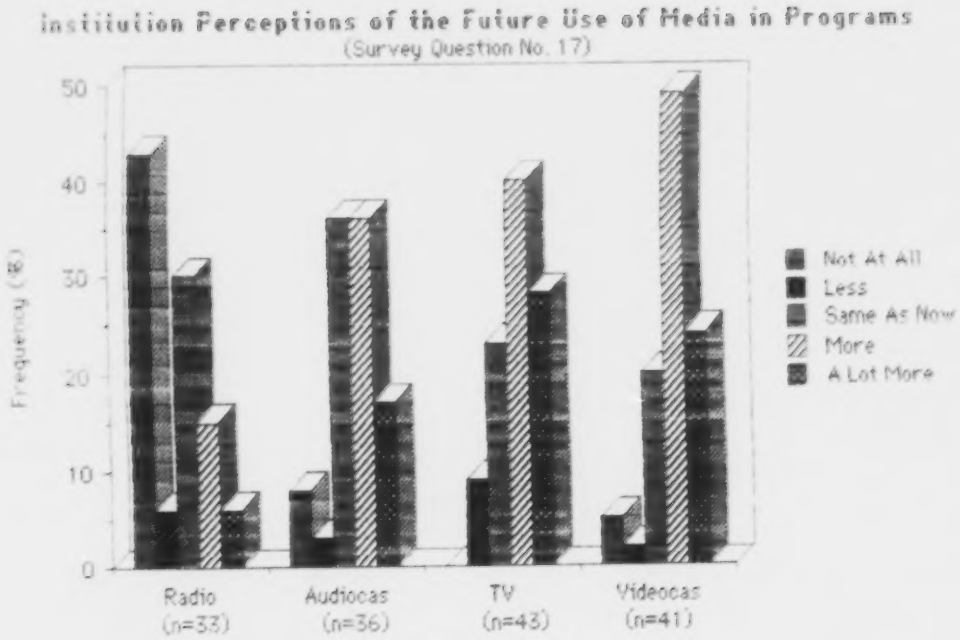
The second comment seems to reflect the importance attached by the institutions surveyed to the availability of funds and the production and distribution cost of television in determining its use for distance instruction. The comment also highlights a very crucial point that might determine the future of distance education programs -- the influence of industry in the decision making of a campus to provide education to distant learners.

I. E. Future Plans for the Use of Media to Deliver Distance Instruction

I. E. 1. Future Plans for Radio and Television Broadcasting, and Audiocassette and Videocassette Distribution

Institutions surveyed were asked to give their opinions on what was most likely to happen in the future in their programs with regard to radio and television broadcasting, and audiocassette and videocassette distribution. (See Figure 17.) The overall pattern of responses indicate that radio broadcasting will not be used at all, or very little in the future. Audiocassette distribution would be almost the same as now, and there would be much more of television

Figure 17


Institution Perceptions of the Future Use of Media in Programs
(Survey Question No. 17)
Frequency (#)
50
40
30
20
10
0
Radio (n=33)
Audiocas (n=36)
TV (n=43)
Videocas (n=41)
Not At All
Less
Same As Now
More
A Lot More

broadcasting and videocassette mailing. (The term "television broadcasting" included satellite, cable and ITFS distributions.) Therefore, projections for future use seem to indicate that the emphasis will be more on both broadcast and copy video technologies.

I. E. 2. Current and Future Use of Television Delivery Technologies

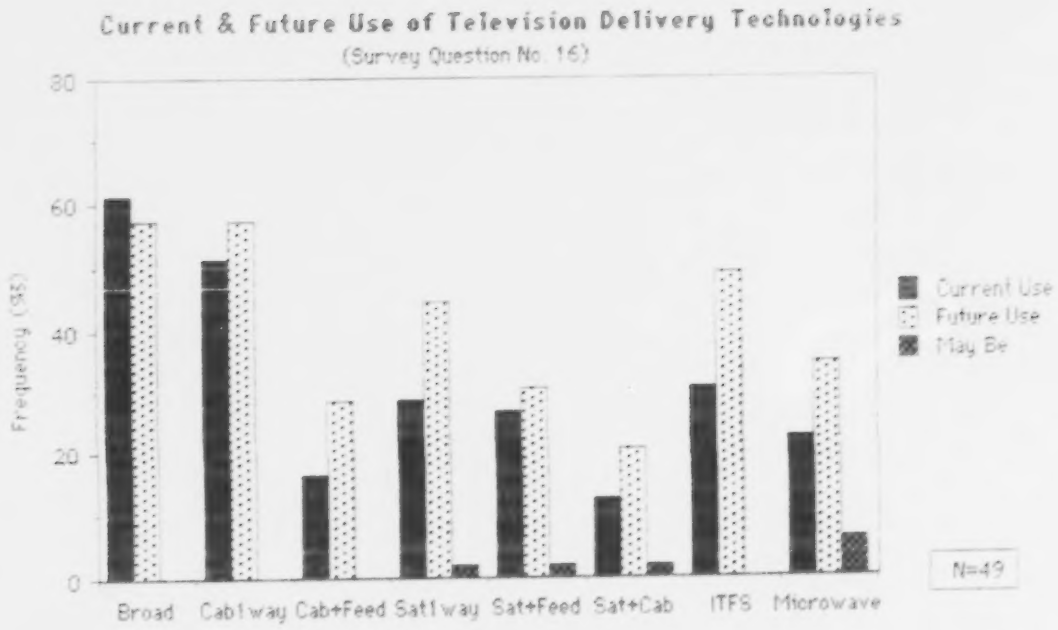
Open broadcast television and cable one-way are the television delivery technologies currently used by most of the institutions surveyed to deliver distance education. They will also be the delivery technologies that will be used by most of the institutions in the future. (See Figure 18.)

However, comparison of the current and future use of television technologies (Figure 18) indicate that ITFS, satellite one-way delivery, cable television with telephone feedback during program, and point-to-point microwave will be used by more institutions than are currently using it now to deliver distance education. In the future, there will be a slight drop in the use of open-broadcast television and a slight increase in the use of cable one-way.

The general picture that emerges about the use of television technologies in the future, is that several institutions that are not using these technologies now, will be using them in the future to deliver distance instruction, and more institutions among them will be using ITFS and satellite one-way.

It is pertinent to quote here, information given by one institution serving professionals in the health occupations, regarding the number of advantages to providing continuing education

Figure 18


Current & Future Use of Television Delivery Technologies
(Survey Question No. 16)
Frequency (%S)
80
60
40
20
0
Broad
Cab1way
Cab+Feed
Sat1way
Sat+Feed
Sat+Cab
ITFS
Microwave
Current Use
Future Use
May Be
N=49

programs via satellite.

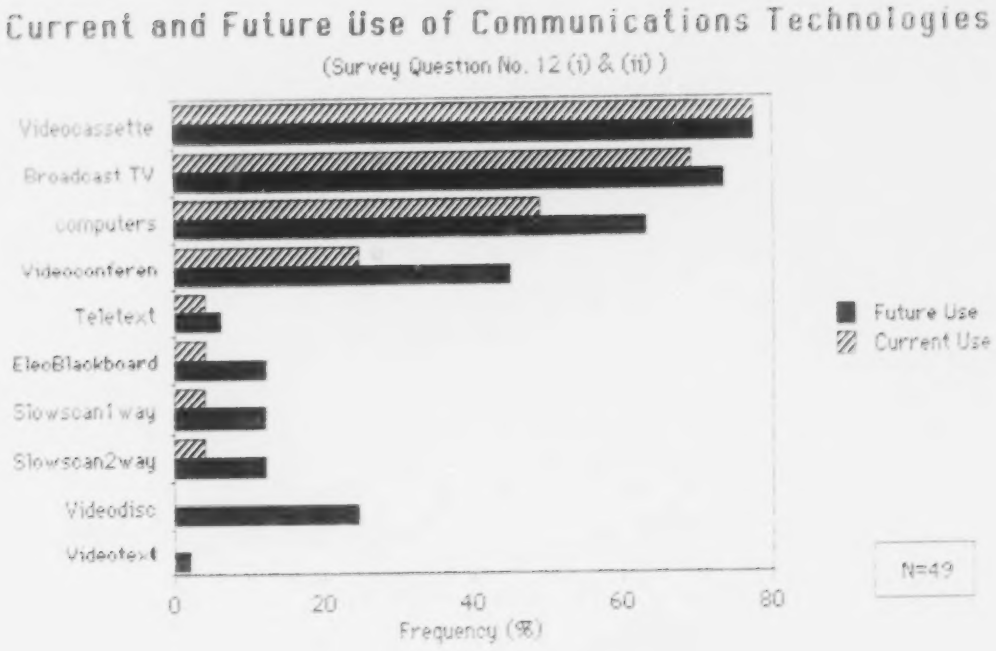
> "I think most importantly to note would be the cost effectiveness of such a system. For the cost of sending one person to an out-of-town conference, you can have several people at the hospital view programs and eliminate lost work time. Videotapes of programs can be made for people who are not able to participate during the live broadcast. Continuing education credits are also available for many programs.
>
> A limitation of this type of system, for example, might be if you were conducting a course where you were asking questions of the students. The only feedback you could receive would be via telephone, as it is very costly to have an uplink and downlink at each site to provide two-way audio and video."

Another institution mentioned that they offered a graduate degree by videotape. In this program, the on-campus classes were taped and shipped or up-linked for satellite transmission.

I. E. 3. Current and Future Use of Video, Computer and Telephone Technologies

Videocassettes and broadcast television will be used in the future as much as they are being used now by most of the institutions surveyed. (See Figure 19.) A marked difference can be observed in the use of videoconferencing and computers. More institutions, than are using it now, will be using these two

Figure 19


Current and Future Use of Communications Technologies
(Survey Question No. 12 (i) & (ii))
Videocassette
Broadcast TV
computers
Videoconferen
Teletext
EleoBlackboard
Slowscan1way
Slowscan2way
Videodisc
Videotex
0
20
40
60
80
Frequency (%)
Future Use
Current Use
N=49

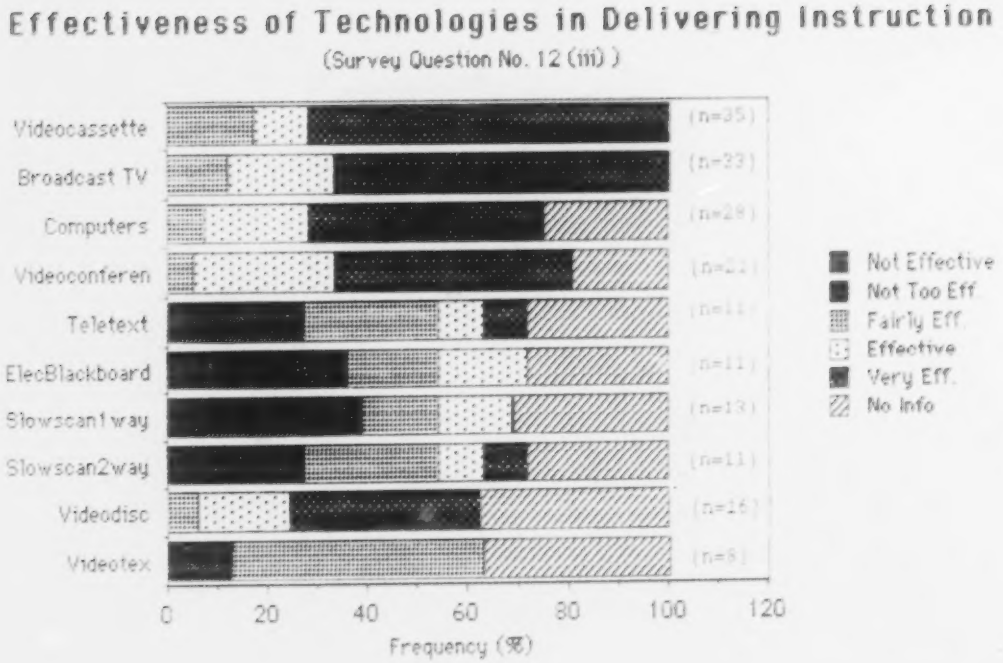
technologies in the future to deliver instruction. Although none of the institutions surveyed currently used videodisc, about (25%) plan to use it in the future. Electronic blackboard, slowscan one-way, and slow-scan two-way show a slight increase in use in the future.

Effectiveness ratings for these technologies (Figure 20), show that they closely reflect institution plans for their future use to deliver instruction. When the ratings for "effective" and "very effective" categories are combined, broadcast television is rated as an effective medium by a majority of institutions, followed in order by videocassettes, videoconferencing, computers and videodisc.

I. E. 4. Future Plans to Improve the Delivery System and Support Services

In an open-ended item institutions were requested to indicate their future plans to improve the delivery system and student support services. Of the 36 institutions that responded to this question, a majority of institutions (21) indicated the upgrading of equipment and facilities as of primary importance. On the whole, more institutions mentioned the improvement of the delivery system by the adoption or expansion of communications technologies than the improvement of student support services. In terms of using communications technologies to improve the instructional delivery system, the following were mentioned.

Figure 20


Effectiveness of Technologies in Delivering Instruction
(Survey Question No. 12 (iii))
Videocassette
Broadcast TV
Computers
Videoconferen
Teletext
ElecBlackboard
Slowscan1way
Slowscan2way
Videodisc
Videotex
(n=35)
(n=33)
(n=28)
(n=22)
(n=11)
(n=11)
(n=13)
(n=11)
(n=16)
(n=8)
0
20
40
60
80
100
120
Frequency (%)
Not Effective
Not Too Eff
Fairly Eff.
Effective
Very Eff.
No Info

	No. of Institutions
ITFS adoption or improvement	7
Live interaction thru sophisticated tech.	6
Larger selection of telecourses	6
Cable expansion	5
Check-out system for telecourses on videocassettes	4
Satellite delivery	4
Increase teleconferencing	4
Microwave adoption or improvement	4
Computerization for electronic mail adoption	3
Compressed video adoption or improvement	2
Slow scan TV to upgrade visuals	2
Increase open-broadcasting	2
Videoconferencing	1

In terms of improving the student support system, the following were mentioned.

	No. of Institutions
Improving student feedback system	6
Improve services at learning centers	5
Improve instructional design	5
Academic advising/counselling	3

Four institutions mentioned "more in-service training for faculty." This is important in view of the number of institutions that mentioned faculty resistance to television instruction as a major barrier to the use of television.

II. Means Used to Integrate Television Programs with Textual and Other Media in Distance Education Courses.

II. A. Supplementary Materials Used to Help Students Learn from Television Programs

Supplementary materials that were used to integrate television programs with the rest of the course by a majority of institutions

were: a) pre-broadcast notes preparing students for what they will see in the television program (59%), and b) follow-up exercises after viewing the television programs (51%). (See responses to questionnaire item [7:i] in Figure 21.) Effectiveness ratings for these two kinds of materials (combined "effective" and "very effective" categories), indicate that those who use these materials felt that they were effective in helping students learn from television programs. (See responses to questionnaire item [7:ii] in Figure 22.) It should be pointed out here, that when compared to the other types of materials listed in this question, these two types, pre-broadcast notes and follow-up exercises, can be designed by institutions to be used with pre-produced television programs.

Very few institutions indicated using screen presentation of the correct answer and discussion (26%), and exercises requiring student responses during transmission (23%). These activities could be used only by institutions that produce their own television programs as they have to be incorporated into the script. Therefore, institutions that use pre-produced telecourses will not be able to use these techniques to help students learn from television programs. These institutions will have to depend on pre-broadcast notes and follow-up exercises to integrate the television component to the rest of the course.

Effectiveness ratings for these two activities indicate that exercises requiring student responses during transmission were considered to be "very effective" by (78%) of the institutions, and screen presentation of the correct answer and discussion was

Figure 21

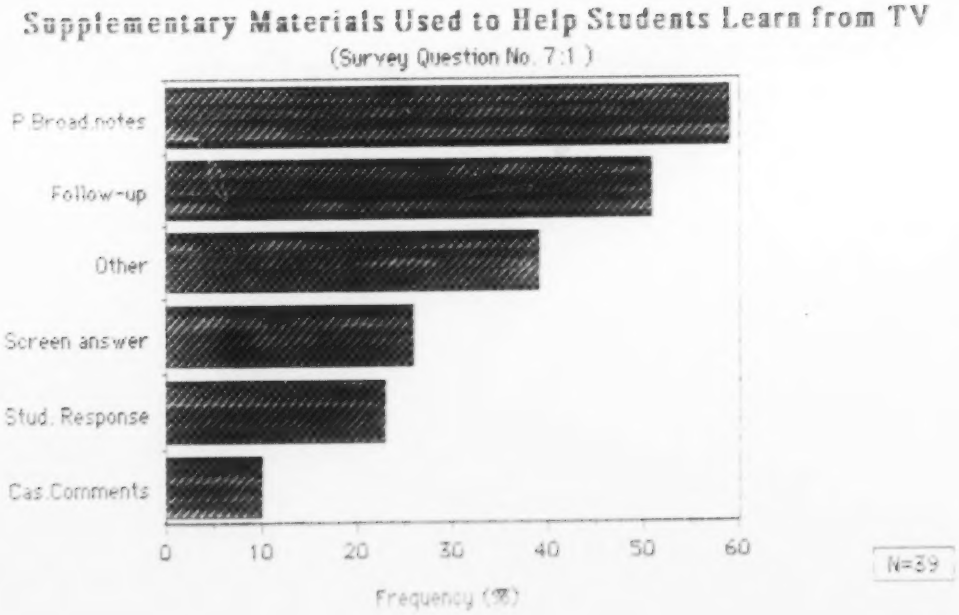
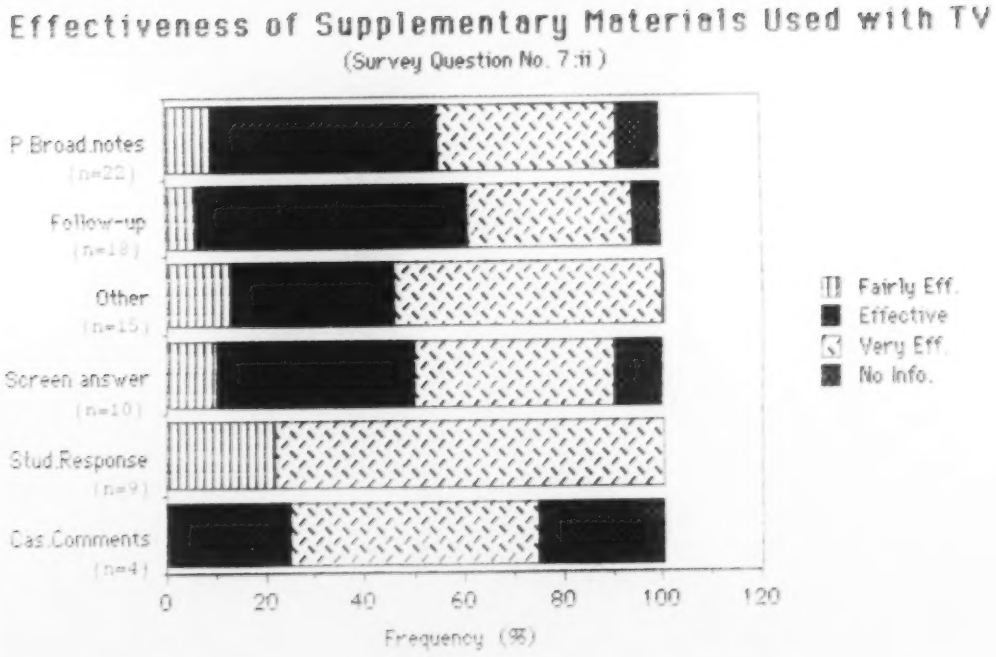

Supplementary Materials Used to Help Students Learn from TV
(Survey Question No. 7:1)
P.Broad.notes
Follow-up
Other
Screen answer
Stud. Response
Cas.Comments
0
10
20
30
40
50
60
N=39
Frequency (%)

Figure 22


Effectiveness of Supplementary Materials Used with TV
(Survey Question No. 7:ii)
P.Broad.notes
(n=22)
Follow-up
(n=18)
Other
(n=15)
Screen answer
(n=10)
Stud.Response
(n=9)
Cas.Comments
(n=4)
0
20
40
60
80
100
120
Frequency (%)
Fairly Eff.
Effective
Very Eff.
No Info.

considered "effective" by (40%) and "very effective" by (40%) of the institutions that used them. These findings have implications for those who produce television programs or specially designed videocassettes for distant delivery. It appears that the incorporation of these two techniques will help students learn from television programs. Since exercises requiring student responses during transmission were considered to be very effective by a number of institutions, this implies that interactive television delivery technologies can be much more effective.

Only four institutions (10%) indicated that they used audiocassettes to distribute commentaries on television programs. They were rated "effective" by (25%) and "very effective" by (50%) of the institutions that used them.

About two fifths of the institutions that responded to this question (Figure 21) were using materials "other" than those listed in this questionnaire item. Of the "other" category, the study guide (13%) and on-campus sessions (8%) were used most often. Institutions in the rest of the "other" category (18%) mentioned the following: telephoned question for telecasts, computer mail, quizzes with computerized prescriptive feedback, supplemental texts, conferences on campus and weekly telephone conferences with instructor. Figure 22 indicates that all of these materials were considered either "effective" or "very effective" by institutions that used them.

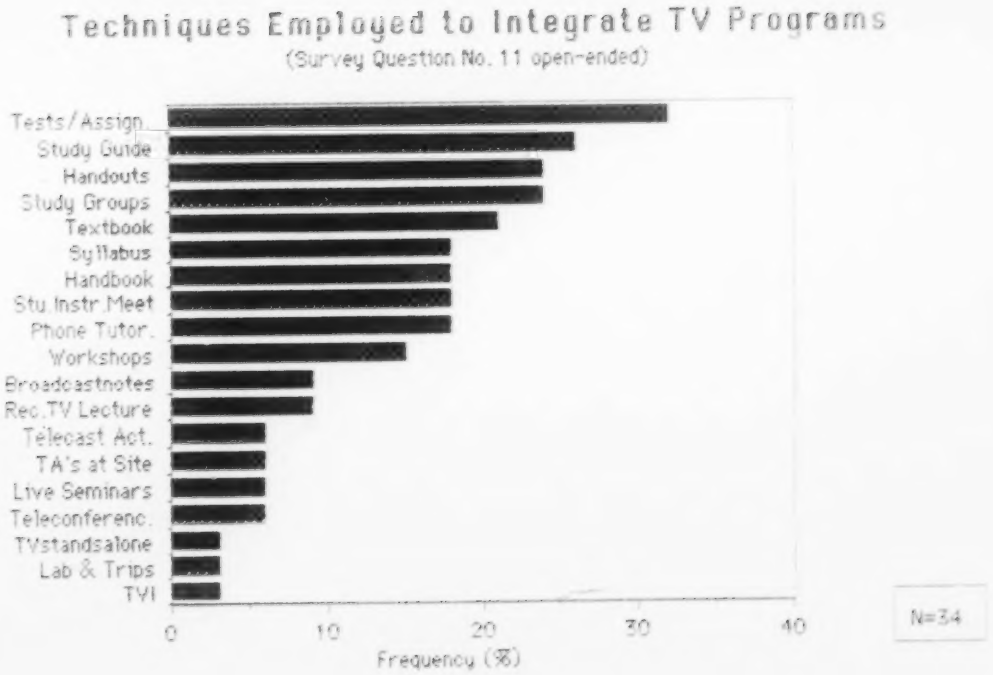
II. B. Techniques Employed to Integrate Television Programs Into the Course

In an open-ended question (questionnaire item 11), institutions were requested to list techniques that they employed to integrate the television programs with the textual material and other media so that students can see the relevance of the programs. A total of 34 institutions responded to this question, and most of them stated that they used tests, quizzes and assignments (32%), and study guides (26%) to integrate television programs into the course. (See Figure 23.)

About a quarter of the institutions that responded reported using the following materials and techniques: handouts (24%), study groups or discussion groups (24%), and textbooks (21%). About one fifth mentioned each of detailed syllabuses (18%), instructional handbooks (18%), student instructor meetings (18%), and tutoring via telephone (18%). Workshops and seminars were used by about (15%) of the institutions.

Few indicated the use of broadcast notes (9%) and class lectures recorded for television (9%). A handful of institutions (6%) mentioned the use of activities during telecast, group meetings with tutors or TA's at site, cablecast live seminars and audio teleconferencing. Only (3%) mentioned Tutored Video Instruction (TVI) methods, and lab and field trips when appropriate. One institution pointed out that television programs nearly stand alone in their interactive cable system.

Figure 23


Techniques Employed to Integrate TV Programs
(Survey Question No. 11 open-ended)
Tests/Assign.
Study Guide
Handouts
Study Groups
Textbook
Syllabus
Handbook
Stu.Instr.Meet
Phone Tutor.
Workshops
Broadcastnotes
Rec.TV Lecture
Telecast Act.
TA's at Site
Live Seminars
Teleconferenc.
TVstandsalone
Lab & Trips
TVI
0
10
20
30
40
Frequency (%)
N=34

These responses indicate that a variety of techniques were being employed by the institutions surveyed to integrate the television component into the course. However, only a small percentage of institutions that use television to deliver instruction indicated using integration techniques. The fact that this was an open-ended question must be kept in mind when considering this percentage that indicated the use of integration techniques.

III. **Student Support Services Provided by Institutions**

In a distance learning system, the delivery medium cannot by itself provide for learner needs such as supervision, guidance, additional clarification and verification of results. This is especially so, if the delivery medium is non-interactive (permits communication in only one direction), such as open-broadcast television. In order to consolidate and extend the impact of the delivery media, they have to be accompanied by support and follow-up activities. Therefore, the effective integration of student support devices, the delivery media and the learning materials is of prime importance in a distance learning system. The discussion that follows highlights the student support devices that are currently being used by institutions that deliver instruction off-campus, the support services that are considered effective by these institutions, and the advantages and disadvantages of providing instruction at support centers.

III. A. Student Support Services Currently Provided by Institutions

The support service provided by a vast majority of institutions was telephone office-hours for faculty teaching the course (86%). (See responses to questionnaire item [12:i] in Figure 24.) Study guides (75%), individualized feedback from faculty (75%), and calls initiated by faculty (70%) were used by a majority of institutions.

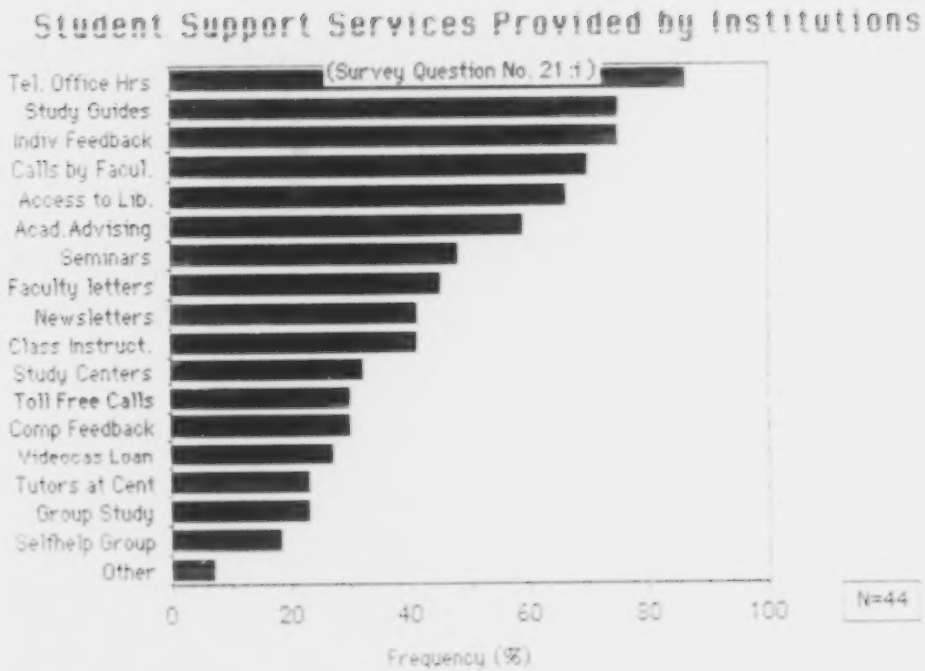
A substantial proportion of institutions surveyed indicated that they provided services such as student access to public or college libraries (66%) and face-to-face academic advising (59%).

Over two fifths of the institutions stated that they used the following services: seminars or workshops (48%), letters from faculty or staff commenting on student progress (45%), newsletters (41%), and classroom instruction or residential courses (41%).

Of the 44 institutions that responded to this question, a third were using study centers off-campus to help distant learners. The services provided at these centers and the advntages and disadvantages of providing these services are discussed later. About a third were providing support in the form of toll free calls to contact faculty (30%) and computerized feedback (30%).

Only a few stated that they used student support services such as a videocassette loan scheme (27%), student access to tutors at study centers (23%), arranging student group study sessions (23%), and organizing self-help groups (18%). The other support services mentioned are: regular weekly or semi-weekly class sessions by telephone and outreach office staff.

Figure 24


Student Support Services Provided by Institutions
(Survey Question No. 21:1)
Tel. Office Hrs
Study Guides
Indiv Feedback
Calls by Facul.
Access to Lib.
Acad. Advising
Seminars
Faculty letters
Newsletters
Class Instruct.
Study Centers
Toll Free Calls
Comp Feedback
Videocas Loan
Tutors at Cent
Group Study
Selfhelp Group
Other
0
20
40
60
80
100
N=44
Frequency (%)

It should be pointed out that the consortia that did respond to this question, completed this question based on information they had from educational institutions that are affiliated with them.

III. B. The Types of Services Considered "Very Helpful" as a Means of Support in a Distance Education System

Helpfulness ratings for student support services are provided in Figure 25. The ratings indicate that a majority of institutions (75%) considered the study guide to be a "very helpful" support to learners, followed by individualized feedback from faculty (70%).

A marked difference was observed between the frequency of use and the helpfulness of two support services. Although telephone office hours for faculty was the support service that was used by a majority of institutions (86%), this service was considered "very helpful" only by about (47%). On the other hand, computerized feedback was used by only about (30%) of the institutions, but had a "very helpful" rating of about (64%).

The five most helpful support services in the order of importance were study guides, individualized feedback from faculty, computerized feedback, telephone calls initiated by faculty and student access to public or college libraries. Crosstabulation of the data for this question by institutions that use television as the main delivery medium (Figure 26) indicate that four of the five most helpful services are the same, study guides, telephone calls initiated by faculty, individualized feedback from faculty, and student access to public and college libraries. However, instead of

Figure 25

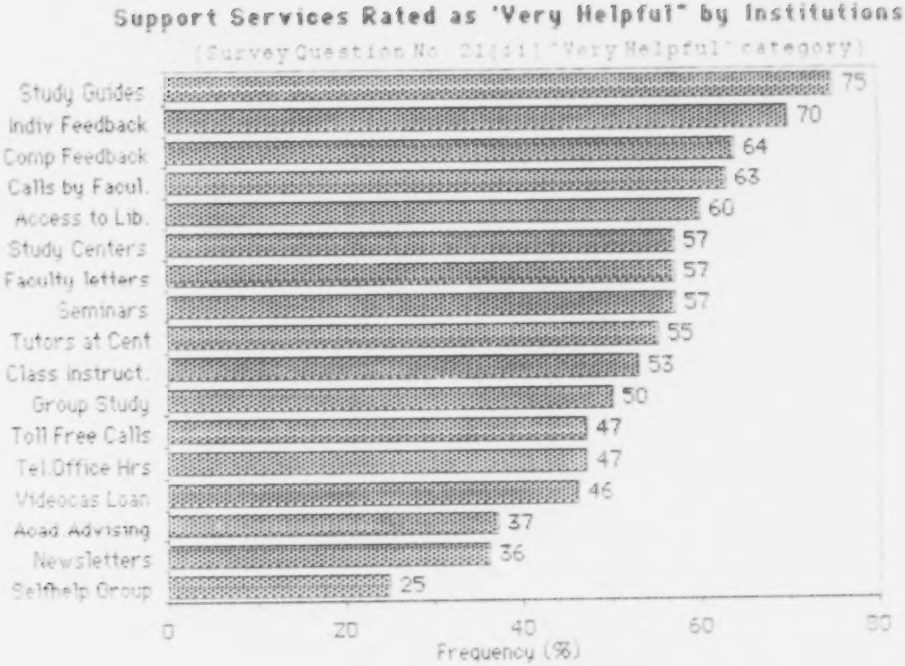
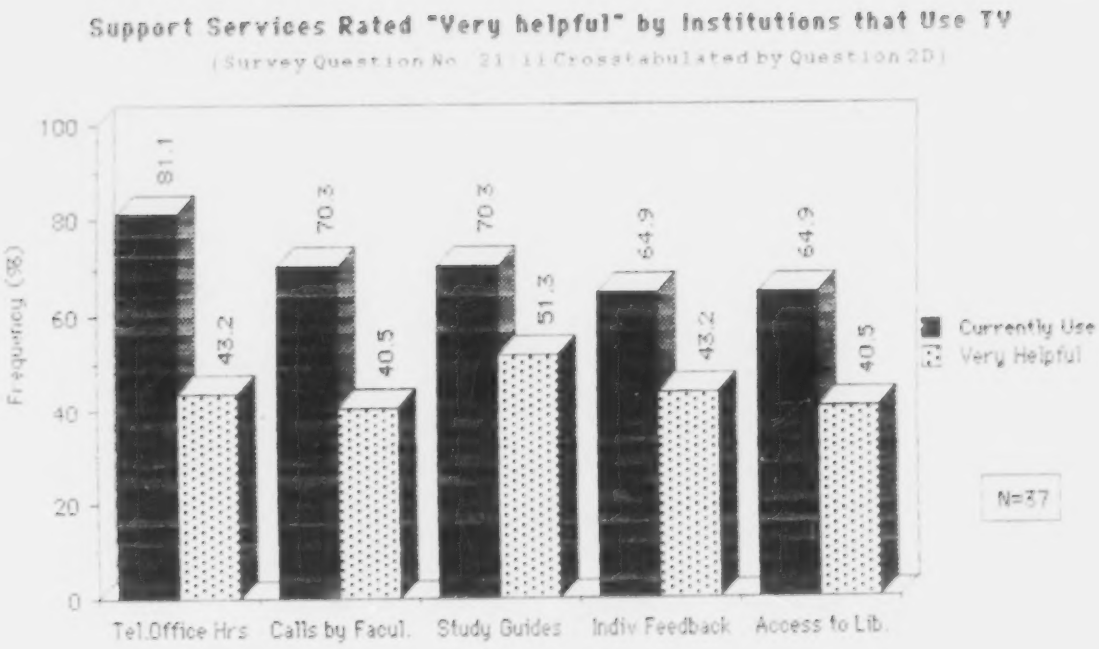

Support Services Rated as 'Very Helpful' by Institutions
(Survey Question No. 21(ii) "Very Helpful" category)
Study Guides 75
Indiv Feedback 70
Comp Feedback 64
Calls by Facul. 63
Access to Lib. 60
Study Centers 57
Faculty letters 57
Seminars 57
Tutors at Cent 55
Class instruct. 53
Group Study 50
Toll Free Calls 47
Tel.Office Hrs 47
Videocas Loan 46
Acad Advising 37
Newsletters 36
Selfhelp Group 25
0
20
40
60
80
Frequency (%)

Figure 26


Support Services Rated "Very helpful" by Institutions that Use TV
(Survey Question No. 21.11 Crosstabulated by Question 2D)
Frequency (%)
100
80
60
40
20
0
81.1
43.2
70.3
40.5
70.3
51.3
64.9
43.2
64.9
40.5
Tel.Office Hrs
Calls by Facul.
Study Guides
Indiv Feedback
Access to Lib.
Currently Use
Very Helpful
N=37

computerized feedback, institutions using television as the main delivery medium gave a higher rating to telephone office hours for faculty.

It may be that because most of these institutions were using open-broadcast television as the primary delivery medium, it was necessary to provide telephone office hours for faculty so that students could call in to clarify information received through open-broadcast deliveries.

It can be concluded from this data that the study guide was considered to be the most helpful form of support for students learning at a distance. Interaction in the form of calls initiated by faculty and telephone office hours were also very helpful in supporting the distant learner. Individualized feedback and computerized feedback were also considered a necessary ingredient of support. And student access to public and college libraries is a very helpful support service in a distance learning system.

III. C. Services Provided at Off-Campus Study Centers

Study centers off-campus were provided by 20 institutions (41%) of the total number of institutions surveyed. Consortia did not provide centers, but some universities affiliated with consortia provided study centers off-campus.

The types of services provided by most of the institutions that reported having study centers were student access to media equipment and library facilities rather than arrangements for tutor student interaction. Media equipment such as videocassette players were

provided by (85%), microcomputers by (65%), audiocassette players by (50%), and library facilities such as books, tapes and cassettes were provided by (80%). Fewer institutions provided activities requiring student-tutor interaction, or student-student interaction. Tutored Video Instruction (TVI: videotaped presentations followed by discussions) was provided by (45%), face-to-face discussions with tutor in individual sessions by (20%). The "other" services mentioned were: counselling, phone links back to campus and live microwave video interconnection to the main campus.

In an open-ended question, institutions were asked to list the major advantages and disadvantages of providing services at study centers. Providing student access to educational facilities was listed by many (54%) as the major advantage. About two fifths (42%) mentioned that study centers help to localize the instruction and about a quarter of the institutions stated that the centers provide student with an opportunity to interact with others (25%). About (21%) mentioned that the centers provided individualized attention to students. One institution mentioned that the center had a computer connection to the campus library which enabled students to access information.

The major disadvantage of providing services at study centers was the cost involved in running (38%) and staffing (29%) them. Other disadvantages mentioned were limited resources and space (17%), equipment maintenance (13%), lack of control (8%), theft (8%) and means of transportation to the center (8%). One institution stated that it was difficult to motivate students to use the center

and one stated that there were no disadvantages associated with providing services at these centers.

Whereas off-campus learning centers are an excellent means of providing student support in a distance teaching system since it localizes the instruction and provides students with access to learning facilities, the cost of maintaining them can be a major burden to an institution providing such a service.

APPENDIX I

SURVEY QUESTIONNAIRE

Note: The term "student" refers to distance learners,
(off-campus continuing/professional education students).
The term "TV program" refers to both broadcast and copy video technologies.

1. What type of students do you serve in your program? (Circle the letter/s that apply)
   A. ON-CAMPUS STUDENTS
   B. OFF-CAMPUS CONTINUING EDUCATION STUDENTS
   C. OFF-CAMPUS PROFESSIONAL CONTINUING EDUCATION STUDENTS

2. Which of the following do you use to deliver instruction to distance education students? (Circle the letter/s of your answer)
   A. PRINTED CORRESPONDENCE TEXTS
   B. RADIO
   C. AUDIOCASSETTES
   D. TELEVISION
   E. VIDEOCASSETTES
   F. COMPUTERS
   G. TELECONFERENCING/VIDEOCONFERENCING
   H. OTHER (PLEASE SPECIFY)

   _____

3. (i) On which media do you rely to deliver the major amount of curricular content? (Circle letter of your choice in column [i] referring to the list in Question 2)
   (ii) Which do you use to supplement the main delivery media? (Circle letter of your choice in column [ii] referring to the list in Question 2)

Subject Areas:	[i] Main Delivery Media	[ii] Supplementary Media
BIOLOGICAL SCIENCES.....	A B C D E F G H	A B C D E F G H
MATHEMATICAL SCIENCES.....	A B C D E F G H	A B C D E F G H
TECHNOLOGY.....	A B C D E F G H	A B C D E F G H
SOCIAL SCIENCES.....	A B C D E F G H	A B C D E F G H
EDUCATIONAL STUDIES.....	A B C D E F G H	A B C D E F G H
HUMANITIES.....	A B C D E F G H	A B C D E F G H
FINE ARTS.....	A B C D E F G H	A B C D E F G H
MECHANICS.....	A B C D E F G H	A B C D E F G H
ARCHITECTURE & DESIGN.....	A B C D E F G H	A B C D E F G H
PHYSICAL EDUCATION.....	A B C D E F G H	A B C D E F G H
(OTHER)_____	A B C D E F G H	A B C D E F G H

4. How well do students like the following delivery media?
(Circle the number of your answer on the scale)

	Not At All	Not Much	Some-what	Quite A lot	Very Much	No Info.
A. PRINTED CORRESPONDENCE TEXTS.....	1	2	3	4	5	6
B. RADIO BROADCASTS.....	1	2	3	4	5	6
C. AUDIOCASSETTES.....	1	2	3	4	5	6
D. TELEVISION BROADCASTS.....	1	2	3	4	5	6
E. VIDEOCASSETTES.....	1	2	3	4	5	6
F. COMPUTERS.....	1	2	3	4	5	6
G. TELECONFERENCING.....	1	2	3	4	5	6
H. OTHER (PLEASE SPECIFY).....	1	2	3	4	5	6

_____

5. (i) Do you use TV programs to deliver material in the following subject areas? (If yes, check box in column [i] for each subject area)
(ii) In your opinion, how effective are TV programs for delivering material in each subject area? (Circle the number of your response on the scale in column [ii])

	[i] Use TV	[ii] (Eff. means Effective) Not Eff.	Not Too Eff.	Fairly Eff.	Eff.	Very Eff.	No Info.
A. BIOLOGICAL SCIENCES.....	___	1	2	3	4	5	6
B. MATHEMATICAL SCIENCES....	___	1	2	3	4	5	6
C. TECHNOLOGY.....	___	1	2	3	4	5	6
D. SOCIAL SCIENCES.....	___	1	2	3	4	5	6
E. EDUCATIONAL STUDIES.....	___	1	2	3	4	5	6
F. HUMANITIES.....	___	1	2	3	4	5	6
G. FINE ARTS.....	___	1	2	3	4	5	6
H. MECHANICS.....	___	1	2	3	4	5	6
I. ARCHITECTURE & DESIGN....	___	1	2	3	4	5	6
J. PHYSICAL EDUCATION.....	___	1	2	3	4	5	6
K. OTHER (PLEASE SPECIFY)...	___	1	2	3	4	5	6

_____

6. What is the main function of the television components in a majority of your courses? (Circle letter)
A. DELIVERS A LARGE PORTION OF THE COURSE MATERIAL
B. SUPPLEMENTS MATERIAL NOT COVERED IN TEXTS
C. REINFORCES AND ENRICHES PRINT AND OTHER MEDIA
D. PROVIDES THE LEARNER WITH FEEDBACK
E. OTHER (PLEASE SPECIFY) _____

7. (i) Check the box in column [i] if you use the following types of material to help students learn from TV programs.
(ii) In your opinion how effective are the materials in helping students learn from TV programs? (Circle the number of your response on the scale)

	[i] Use Mat	[ii] (Eff. means Effective) Not Eff.	Not Too Eff.	Fairly Eff.	Eff.	Very Eff.	No Info.
A. PRE BROADCAST NOTES PREPARING STUDENTS FOR WHAT THEY WILL SEE IN THE TV PROGRAM.....	___	1	2	3	4	5	6
B. EXERCISES REQUIRING STUDENT RESPONSES DURING TRANSMISSION....	___	1	2	3	4	5	6
C. SCREEN PRESENTATION OF THE CORRECT ANSWER AND DISCUSSION....	___	1	2	3	4	5	6
D. FOLLOW-UP EXERCISES AFTER VIEWING.....	___	1	2	3	4	5	6
E. COMMENTARIES ON TV PROGRAMS DISTRIBUTED ON AUDIOCASSETTES....	___	1	2	3	4	5	6
F. OTHER (PLEASE SPECIFY) _____.....	___	1	2	3	4	5	6

8. From your experience which type of television format has been most effective in the following subject areas? (Check the appropriate box)

Subject Areas	Television Formats					
	Lecture	Documentary	Case Study	Interviews	Demonstrations	Seminars/ Workshops
A. BIOLOGICAL SCIENCES.....						
B. MATHEMATICAL SCIENCES.....						
C. TECHNOLOGY.....						
D. SOCIAL SCIENCES.....						
E. EDUCATIONAL STUDIES.....						
F. HUMANITIES.....						
G. FINE ARTS.....						
H. MECHANICS.....						
I. ARCHITECTURE & DESIGN.....						
J. PHYSICAL EDUCATION.....						
K. OTHER (PLEASE SPECIFY).....						

_____

9. If your institution is a member of a television consortium, what is the nature of the relationship with that consortium? (Circle letter/s)
   A. YOU PRODUCE TELECOURSES WHICH YOU LEASE TO MEMBERS OF THE CONSORTIUM
   B. YOU LEASE TELECOURSES FROM THE CONSORTIUM
   C. YOU PURCHASE TELECOURSES FROM THE CONSORTIUM
   D. YOU USE THE TELECOMMUNICATIONS FACILITIES OF THE CONSORTIUM FOR TELECONFERENCING
   E. YOU USE MEDIA EQUIPMENT THAT BELONGS TO THE CONSORTIUM
   F. OTHER (PLEASE SPECIFY)_____

10. How important are the following factors in determining the use of TV programs in your courses? (Circle the number of your answer on the scale) [Imp. = Important]

	Not Imp. At All	Not Too Imp.	Somewhat Imp.	Fairly Imp.	Very Imp.
A. ACADEMIC NECESSITY	1	2	3	4	5
B. NUMBER OF STUDENTS TAKING THE COURSE.....	1	2	3	4	5
C. THE DURATION OF A COURSE.....	1	2	3	4	5
D. AVAILABILITY OF FUNDS.....	1	2	3	4	5
E. STAFFING CONSIDERATIONS.....	1	2	3	4	5
F. COOPERATION WITH A BROADCAST ORGANIZATION.	1	2	3	4	5
G. AVAILABILITY OF GOOD TRANSMISSION TIMES...	1	2	3	4	5
H. STUDENT ACCESS TO TV VIEWING FACILITIES...	1	2	3	4	5
I. DEPENDENCY ON ANOTHER EDUCATIONAL ORGANIZATION.....	1	2	3	4	5
J. OTHER (PLEASE SPECIFY).....	1	2	3	4	5

_____

11. What techniques do you employ to integrate the TV programs with the textual material and other media so that students can see the relevance of the programs?

_____

_____

_____

_____

12. (i) Which of the following media do you currently use to deliver course material? (Check the appropriate box in column [i])
(ii) Which of the following media do you plan to use in the future to deliver course material? (Check the appropriate box in column [ii])
(iii) According to your opinion, how effective is each medium in delivering course content to distance learners? (Circle your answer on the scale in col. [iii])

	[i]	[ii]	[iii] (Eff. means Effective)					
			Not Eff.	Not Too Eff.	Fairly Eff.	Eff.	Very Eff.	No Info.
A. BROADCAST TELEVISION	__	__	1	2	3	4	5	6
B. VIDEOCASSETTES.....	__	__	1	2	3	4	5	6
C. VIDEODISCS.....	__	__	1	2	3	4	5	6
D. COMPUTERS.....	__	__	1	2	3	4	5	6
E. TELETEXT.....	__	__	1	2	3	4	5	6
F. VIDEOTEX OR VIEWDATA.....	__	__	1	2	3	4	5	6
G. VIDEOCONFERENCING.....	__	__	1	2	3	4	5	6
H. ELECTRONIC BLACKBOARD (WITH STUDENTS VIEWING ON TV).....	__	__	1	2	3	4	5	6
I. SLOW SCAN (FREEZE FRAME) TV (ONE-WAY).....	__	__	1	2	3	4	5	6
J. SLOW SCAN (FREEZE FRAME) TV (TWO-WAY VIDEO AND AUDIO VIA TELEPHONE).....	__	__	1	2	3	4	5	6

13. If you use videocassettes, are they specially designed to take advantage of the cassette medium (e.g., stop/review functions) or are they used to record TV broadcasts? (Circle letter)
A. SPECIALLY DESIGNED TO TAKE ADVANTAGE OF THE CASSETTE MEDIUM (e.g., students directed at end of sequences to stop and take notes on, or discuss what they have seen and heard)
B. USED ONLY TO RECORD TV BROADCASTS
C. SOME ARE SPECIALLY DESIGNED TO TAKE ADVANTAGE OF THE CASSETTE MEDIUM, SOME TO RECORD BROADCASTS

14. If you distribute audiocassettes to your students, for what purposes are they used? (Circle letter/s of your answer)
A. TO PROVIDE ESSENTIAL STUDY MATERIAL
B. TO PROVIDE SUPPLEMENTARY OR RESOURCE MATERIAL
C. TO ENRICH PRINT AND OTHER MEDIA
D. EDUCATIONAL COUNSELLING
E. FEEDBACK ON ASSIGNMENTS
F. REMEDIAL MATERIAL FOR STUDENTS WITH SPECIAL PROBLEMS
G. AUDIO REVIEWS OF TV PROGRAMS
H. OTHER (PLEASE SPECIFY) _____

15. If you use computers, how useful are they in providing the following services in your program? (Circle the number of your answer on the scale)

	Not Useful	Not Too Useful	Fairly Useful	Useful	Very Useful
A. COMPUTER ASSISTED INSTRUCTION (CAI)	1	2	3	4	5
B. GRADING ASSIGNMENTS AND TESTS	1	2	3	4	5
C. INDIVIDUALIZED FEEDBACK TO STUDENTS	1	2	3	4	5
D. AID CORRESPONDENCE TEXT PROCESSING	1	2	3	4	5
E. ADMINISTRATION (e.g., STUDENT RECORDS)					
F. OTHER (SPECIFY)_____	1	2	3	4	5

16. Which of the following television delivery modes do you currently use and which do you plan to use in the future to deliver distance education? (Check the appropriate box in each column)

	Currently Use	Plan To Use
A. OPEN BROADCAST TELEVISION		
B. CABLE TELEVISION (ONE-WAY)		
C. CABLE TELEVISION (TELEPHONE FEEDBACK DURING PROGRAM)		
D. SATELLITE TELEVISION (ONE-WAY)		
E. SATELLITE TELEVISION (TELEPHONE FEEDBACK DURING PROGRAM)		
F. SATELLITE TO CABLE NETWORKS		
G. INSTRUCTIONAL TELEVISION FIXED SERVICE (CLOSED CIRCUIT TV)		
H. POINT TO POINT MICROWAVE		

17. What do you think is most likely to happen in the future in the use of radio and television for distribution of course material in your program? (Circle the number of your response on the scale)

	Not At all	Less	Same As Now	More	A lot More
A. RADIO BROADCASTING	1	2	3	4	5
B. AUDIOCASSETTE MAILING	1	2	3	4	5
C. TELEVISION BROADCASTING	1	2	3	4	5
D. VIDEOCASSETTE MAILING	1	2	3	4	5

18. Are students more likely to complete courses which have a TV component? (Circle the letter of your answer)

A. NO
B. YES
C. CANNOT JUDGE

19. In your opinion, what are some of the major barriers to the use of television for distance education?

_____

_____

_____

_____

20. Are any of the following features part of your program? (If yes, circle the letter/s that apply)

A. IN-SERVICE TRAINING FOR STAFF & FACULTY IN THE USE OF AUDIO-VISUAL EQUIPMENT
B. TRAINING FOR FACULTY IN TV COMMUNICATION TECHNIQUES PRIOR TO DELIVERING COURSES
C. INVOLVE FACULTY IN THE SELECTION, PRODUCTION AND MANAGEMENT OF TELECOURSES
D. OFFER TRAINING TO OTHER EDUCATIONAL INSTITUTIONS ON TECHNIQUES OF TELECOURSE DELIVERY

21. (i) Which of the following student support services do you currently provide? (Check the appropriate box in column [i])
(ii) How helpful is each service as a means of support in a distance education system? (Circle the number of your answer on the scale in column [ii])

Student Support Services	[i]	[ii] Not Help	Not Too Help	Fairly Help	Help	Very Help	No Info
A. TELEPHONE OFFICE HOURS FOR FACULTY	__	1	2	3	4	5	6
B. TOLL FREE CALLS TO CONTACT FACULTY	__	1	2	3	4	5	6
C. TELEPHONE CALLS INITIATED BY FACULTY	__	1	2	3	4	5	6
D. FACE-TO-FACE ACADEMIC ADVISING	__	1	2	3	4	5	6
E. CLASSROOM INSTRUCTION/RESIDENTIAL COURSES	__	1	2	3	4	5	6
F. SEMINARS/WORKSHOPS	__	1	2	3	4	5	6
G. NEWSLETTERS	__	1	2	3	4	5	6
H. STUDY GUIDES	__	1	2	3	4	5	6
I. INDIVIDUALIZED FEEDBACK FROM FACULTY	__	1	2	3	4	5	6
J. COMPUTERIZED FEEDBACK	__	1	2	3	4	5	6
K. STUDY CENTERS (OFF-CAMPUS)	__	1	2	3	4	5	6
L. STUDENT ACCESS TO TUTORS AT STUDY CENTERS	__	1	2	3	4	5	6
M. STUDENT ACCESS TO PUBLIC/COLLEGE LIBRARY	__	1	2	3	4	5	6
N. ORGANIZING SELF-HELP GROUPS	__	1	2	3	4	5	6
O. ARRANGING STUDENT GROUP STUDY SESSIONS	__	1	2	3	4	5	6
P. VIDEOCASSETTE LOAN SCHEME	__	1	2	3	4	5	6
Q. LETTERS FROM FACULTY/STAFF COMMENTING ON STUDENT PROGRESS	__	1	2	3	4	5	6
R. OTHER (PLEASE SPECIFY) _____	__	1	2	3	4	5	6

22. Do you have off-campus Study Centers? (Circle letter)
A. NO (Go To Q-23)
B. YES (If yes) what services do you provide at these centers? (Circle the letter/s of your answer)
A. FACE-TO-FACE DISCUSSIONS WITH TUTOR IN INDIVIDUAL SESSIONS
B. FACE-TO-FACE DISCUSSIONS WITH TUTOR IN GROUP SESSIONS
C. TUTORED VIDEO INSTRUCTION (VIDEOTAPED PRESENTATIONS FOLLOWED BY DISCUSSIONS)
D. LIBRARY FACILITIES (BOOKS, TAPES, CASSETTES)
E. AUDIOCASSETTE PLAYERS TO BE USED AT THE CENTER
F. VIDEOCASSETTE PLAYERS TO BE USED AT THE CENTER
G. MICROCOMPUTERS TO BE USED AT THE CENTER
H. OTHER (PLEASE SPECIFY) _____

23. What are the major advantages and disadvantages of providing services at study Centers?
ADVANTAGES: _____
_____
DISADVANTAGES: _____
_____

24. What is your institutions total enrollment for distance education courses for the current year?
_____

25. What future plans do you have to improve your delivery system and student support services?

Any comments you wish to make about the questionnaire or this research will be appreciated, either here or in a separate letter.

Your contribution to this research is very greatly appreciated. If you would like a summary of the results and an abstract of the dissertation, please check the box on the back of the return envelope and print your name and address on the envelope (Please do not print your name on this questionnaire). I will see that you get it.